



Welcome

Welcome to the CD-ROM version of the *SkillsUSA Championships* *Technical Standards (2005–2007).*



This interactive version of the Technical Standards is being displayed in a program called “Adobe Reader,” which is included on this CD. In this document, you’ll not only find the Technical Standards, but a movie clip, a variety of contest tips, links to relevant Web sites and more.

If you’ve never used Adobe Reader, don’t worry; you’ll soon see just how easy it is. Experiment with the various buttons to see what they do or check the [Help](#) section at the end of this document or [click here for an online tutorial](#). You may also select “Help” from the Adobe Reader menu bar above.

To get started, use the “bookmarks” you see in the left window the same way as you would a Web link; simply click on the desired link to be taken immediately to that page. If one of the bookmarks has an arrow or plus sign next to it (which will depend on whether you’re using a MAC or a PC), click it to reveal more choices. You can then scroll through the desired section using the scroll bar on the right, or you can go from one page to the next (or back again), using the arrows representing “Next Page” or “Previous Page” at the bottom of the Acrobat Reader window.

For your convenience, “**Print This Section**” buttons have been placed on the front page of each contest and other sections of this document. Simply clicking on the button will automatically print only the contest or section you’re viewing. Enjoy this resource, and best of luck to all competitors!

Major Changes

The following is a list of the major changes in the latest revision of the SkillsUSA Championships Technical Standards (2005–2007). These changes can also be found throughout the [General Regulations](#) section but are listed here for your convenience. Please note that the changes listed below affect all contests, but they do *not* reflect other changes which may have been made to individual contests. Make sure you read *both* general and specific regulations for each contest closely.

- Referring to the organization as “VICA” will result in a deduction of points. Effective September 1, 2004, the organization officially became “SkillsUSA.”
- References to the “secondary” level of education should now be changed to “High School.”
- References to the “postsecondary” level of education should now be changed to “College/Postsecondary.”
- The maximum percentage of points for a skill-related written test is now 15 percent.
- A maximum of 10 percent for an oral professional assessment has been added
- All contestants, except special needs students, are required to bring a one-page, typewritten résumé. A penalty will be assessed for failure to submit a résumé.
- All contestants are required to wear official contest uniforms to the contest orientation meeting.

How to Win

Success in the SkillsUSA Championships depends on many factors, not just ability alone. What follows is a brief checklist that will ensure a student's optimal performance at the SkillsUSA Championships. Following this list, on the next page, is an article entitled, "[What it Takes to Win](#)," by Rick Hellman. Following all the guidelines below, as well as the specific guidelines for each contest, will give each competitor the best chance to succeed in their competitions.

READ ALL INSTRUCTIONS CAREFULLY.

If you're an advisor, make sure your students are completely familiar with all aspects of the regulations for their particular contest, as well as the [General Regulations](#). If you're a student, take the initiative to familiarize yourself with all the rules. Losing points in a competition needlessly because of a minor rule infraction could make all the difference between the gold and the silver, the silver and the bronze, or the bronze and a non-medal performance.

READ THE GENERAL REGULATIONS SECTION THOROUGHLY.

The [General Regulations](#) section of this document contains rules that affect every contest. These regulations deal with everything from clothing requirements to tolls. Don't make the mistake of only reading your contest section without first being familiar with the General Regulations.

USE THE MOST CURRENT VERSION OF THE TECHNICAL STANDARDS.

Contest regulations change with each revision of the Technical Standards. Make sure you're preparing from the most current version. This version is good from 2005–2007.

CHECK THE APRIL 15 UPDATE.

The Technical Standards book is revised every three years. Any changes made to contest rules between revisions are included in the April 15 update. The update is mailed to advisors and can also be found online at www.skillsusa.org/april.html. It is vital that you check the update each year to make sure you are following the most current version of your contest's regulations.

FOLLOW CLOTHING REQUIREMENTS.

Needless deductions often occur when contestants wear the wrong type of clothing during their contest. Read the [General Regulations](#) section mentioned above, as well as the clothing requirement section for your particular contest, to make sure you are dressed in accordance with contest standards.

“What it Takes to Win”

by Rick Hellman

What does it take to win at the SkillsUSA Championships?

Determination? Concentration? Natural ability? A little bit of luck?

These are some of the things that past winners, and instructors with consistently winning programs, say when the question is put to them.

Consider Jerry Galyen, a welding instructor at Pinellas Technical Education Center in Clearwater, Fla. Since he started as a SkillsUSA chapter advisor in 1975 (then called “VICA”), Galyen has coached 18 students to gold medals in Florida's statewide SkillsUSA competition. Of those 18, 12 went to take the gold in welding at national competition; one took the silver, another bronze and another fourth place.

It's a record Nebraska University football coach Tom Osborne would envy.

"We just set our standards high," says Galyen. "And we accept only the highest standards from the students. We make them do more than the normal curriculum."

Galyen also has the distinction of serving as advisor to the only SkillsUSA student ever to win the gold medal at the World Skills Competition (WSC). In 1991 with Galyen at his side, Clearwater's Robert Pope won the welding competition in Amsterdam, Holland, and the \$30,000 college scholarship that went with it. In 1995, another of Galyen's students, Branden Muehlbrandt, finished second in the international competition in Lyon, France, earning a \$40,000 scholarship.

Galyen says some students enter his welding program with more natural talent than others.

"But there are two positive traits that, in 20 years of teaching, I've seen that make a student stand out: enthusiasm and persistence," he says.

"Welding is a lot of repetition. It's like becoming a skilled surgeon; there's a lot of hand-eye coordination. And you can't get tired of doing it over and over. Because the more you do it, the better you get.

"And it's not talent so much as a strong desire and enthusiasm and persistence that make you more likely to succeed at welding. I look for enthusiasm and persistence. Skills can be developed in most people."

And, like a successful college sports program, Galyen says success breeds success in SkillsUSA.

"Winning at the international competition, especially, made everybody stand back and look," Galyen says. "The enthusiasm that winning brings makes our program stronger. It's like a winning basketball program—you get the best recruits. And some of them are people who might not otherwise have chosen welding. But once they get involved, it's catching."

Kevin Henigar of Liberal, Mo., knows how good it can feel to be a winner at the SkillsUSA Championships. Kevin won the U.S. gold medal in auto service technology two years in a row, in 1992 and 1993. He went on to compete in the international competition in Lyon, France in 1995.

"It takes a good teacher, for one," says the naturally modest Kevin, crediting Ron Downing, his instructor at Lamar (Mo.) Area Vocational Technical School.

"Mr. Downing keeps his eyes open during competition each year," says Kevin. "He figures out what they do in setting up the contest, and he gives you a good idea of what to study."

But teachers can only do so much to prepare a student. Once the competition starts, students are on their own.

Kevin Henigar says that on contest days, he kept in mind a lesson Ron Downing taught him: "Don't let anything bother you," Kevin says. "If you mess something up, go on and start over. Don't take it with you. Leave it at the last table."

Concentrate on the work at hand, Kevin says, and ignore the person next to you.

"You're competing against yourself, more or less," Kevin says, "especially at the international level."

While not all his students have been as successful as Kevin Henigar or Kevin's brother, Brian, who won the national automotive service technology contest in 1987, Ron Downing has taken students to the national SkillsUSA Championships in 13 of the past 15 years.

"People say, 'What's your secret?'," Downing says. "Well, if you teach the whole automobile—all the systems, both theory and diagnostics—then anything they throw at the students in a contest, you should have covered it and they'll be ready to work on it."

Downing says he tells his students not to worry if a problem looks tough.

"I tell them to never give up. If you see something that looks like an insurmountable task, start with something you know...and pretty soon, the puzzle starts to fit together."

Downing says he tries to "teach all the time."

"Even though you know how something works, even up until the day before the contest, we keep going over those things with them," Downing says.

Oh, and one more thing.

"Read the rules and follow the instructions carefully," Downing advises competitors.

"Sometimes students look at something on the bench and anticipate and start to assume they'll be asked to do certain things, and you can't do that," he says. "That's what they have to do when they get out in the field. The boss will give them a work order, and they will have to carry it out."

Contest Tips



The following pages contain excerpts from past issues of *SkillsUSA Champions* (the “Insider’s Guide to Competition” editions).

These excerpts contain brief articles containing tips and advice from past contest winners and technical committee members who judge the competitions.

These sections feature specific information for many, but not all, contests. If your contest is not listed in these pages, however, you’re still sure to find many general hints and tips that may be applied to whatever contest area you’re competing in. In short, this information can definitely give you an edge *in* your competition and *on* your competition.

Click the “Print This Section” button at the top of the page to print all the contest tips in this section.

Note: As the following pages are excerpts from past issues of *SkillsUSA Champions*, some references or advertisements have been removed from the layout or may be currently out-of-date.



Contest champions aren't made in a day; it's a journey. There are lots of ways to prepare for your upcoming local, state or national competitions. For advice, we went to the experts.

Repeat winners keep an eye on standards

West Jordan (Utah) High School instructors STEVE STEVENS and RICK MINOR have had their share of medalists. They say the key to success at the state and national levels is running contests as close the national standard as possible.

With this simple philosophy, the two have racked up six medals at the SkillsUSA Championships (two gold, three silver, one bronze) in Opening and Closing Ceremonies.

"The trick to winning OCC medals is to start early and have success to build from," Stevens says. "Our teams are built from our mistakes, trying new things and having a lot of fun."

If you'd like to reach the national level, remember these advisors' advice and follow the latest edition of *SkillsUSA Championships Technical Standards*. Also be sure to check out late-breaking news in the annual April 15 update, on the Web at: www.skillsusa.org/april.html. ●

Insider's Guide to Competition

By Craig E. Moore

There are a lot of bases to cover when you're competing in the SkillsUSA Championships. What skills are most important to have? In what areas are many students unprepared? Listen to what the national contest organizers have to say.

Automotive Service Technology

Susan Christopherson, ACDelco

Although technical skills are important, the automotive contest requires students to demonstrate professionalism and the ability to use critical thinking. The students that do well in this contest are the ones that not only are familiar with the vehicle systems — using the tools and doing the tasks — but also are able to think through a problem and recognize what is needed to get the best results.

This competition is about following directions and doing things right. When diagnosing an electrical circuit, a student is required to use a digital volt ohm meter on wiring and connections. How well the students understand that tool and how competent they are at taking measurements without damaging the components or the equipment is important. Similarly, many surgeons know how to use a scalpel, but a really good surgeon knows how to use the scalpel like an artist's tool during the operation and also finish the job with skill.

Underlying all of this is the contestants' attitude. They must believe in their ability and have a strong desire to do well.

A lot of emphasis is placed on advanced technology today because vehicles have become so complex. Contestants have been taught to use highly sophisticated equipment to perform diagnostics but may not have a good grasp of the basics that would allow them to use a more strategic approach to solving problems. All too often, the contestants don't understand basic electricity or general physics. They lack the understanding that these tasks require a combination of overall knowledge of how things work and why things should be done a certain way. It's not just about doing a task for the sake of getting the job done.

A shaky start, but she won't give up

JENNIFER SMITH has learned a thing or two about persistence through the SkillsUSA Championships. The first time she competed in the national Industrial Motor Control contest, she left the floor in tears.

"I thought I knew everything. I thought I was prepared, but I wasn't," she says.

The next day, contest chair Bob Baird went over the rules with her and encouraged her to stick with it. She left determined to come back the next year. "I never wanted to be in that position again," Smith recalls. So she went home and worked harder.

Sure enough, she made it back. While she didn't earn a medal, she learned even more and says, "I know what I need to work on."

Now in her senior year at McEachern High School in Powder Springs, Ga., Smith is planning to return for 2003. A true champion never quits. ●

WEB RESOURCES

- ➔ Don't see your contest represented here? Get more tips online in our "members only" section just for Champions subscribers. Visit www.skillsusa.org/champions. Your login ID is subscriber. Your password is champions.
- ➔ Be sure and check out the SkillsUSA Championships section online for all the latest contest information. You can access it from anywhere on the site. Just click the link labeled "Championships." To get there directly, visit www.skillsusa.org/skills.html.

Like father, like son — must be in the wiring?

Champions aren't born, they're made, right? In the case of the Thibeault family, maybe we'll make an exception. With two generations of gold medalists, it's a good reason to consider the possibility.

LEO THIBEAULT won the gold in residential wiring in 1979 while attending Woonsocket (R.I.) Area Career and Technical Center. His son KEITH THIBEAULT also won the gold in Residential Wiring in 2002. Guess what? He attended the same school.

"To think that we'd be interested in the same thing in high school and do so well at it is sort of weird and priceless at the same time," Keith says of their accomplishment.

Enrolled at the New England Institute of Technology, Keith is also his state's SkillsUSA postsecondary president. Bet dad is proud! ●

Making a difference where it counts most

KISHA JAMES wants to help inner-city youth, and she's not allowing anything to stand in her way.

At the World Skills Competition in 2001, the SkillsUSA member was part of the highest-scoring American team in history. More recently, she was a medalist in the World Championship of Hairdressing. Next in her sights is owning a chain of beauty salons.

And what better place to start than her hometown? In September, she opened KJ Designz Hair Gallery, in the heart of Rochester, N.Y.

Her reasoning: to be a role model for young people in an area where turbulence and despair can prey on those in their formative years.

"They just need to see that someone their age is making a difference and they can too," she says. Is there any greater accomplishment? ●



ACDelco's Susan Christopherson, who offers advice on the previous page, co-chairs the Automotive Service Technology contest with Charles Irwin of DaimlerChrysler Corp.

Health Occupations Professional Portfolio

Sandee Sutter, Health Resource Partners

Generally, participants have good presentation skills and excellent use of technology. Some contestants have difficulty clearly stating their career objective and having the portfolio document their progress toward the objective. Some contestants encounter difficulty with the relationship of the professional portfolio to their presentation. The presentation focuses on the contestant and how they progressively plan to achieve their career objective. The portfolio supports, and is reflected in, the presentation.

Cabinetmaking

Dick Redpath, Black & Decker (U.S.) Inc.

The important skills are layout skills, which include reading blueprints/drawings, cutting accurately, measuring accurately, and assembling and completing to the tolerances specified in drawings.



Redpath: Most important of the layout skills is the ability to read blueprints.

The skill they need most is the ability to read the blueprints/drawings.

Quiz Bowl

Barbara Stevens, Wayne-Fingerlakes BOCES, New York

The most important skills include understanding the rules as published in the *SkillsUSA Championships Technical*

Standards and asking questions through the Web site (<http://quizbowl.wfllbores.org>). Last year, we needed pencils for the qualifying test, and some teams really scrambled to be ready. Teams will be well prepared if they read, practice and ask questions before arriving.

Diesel Equipment Technology

Jack Sukala, J. J. Mfg. Co.

The intangible, "nontechnical" skills of problem solving, communication, safety, courtesy, common sense and working under a time constraint serve competitors to help achieve the goal of "champion." We have seen over the course of many competitions that the loss of 30 points out of 1,400 possible points is the difference between a champion and a good finish. The Diesel contest committee finds many contestants with a good score, but obviously only six as a medal-recognized champion.

The vast majority of competitors are well prepared in most areas of technical skill. If any area is to be highlighted, we would single out electrical (basic knowledge of low voltage principles, terms, diagnostics) and use of precision measurement tools (reading micrometers).

A recurring observation is the *inability* to use a common "shop manual" of major truck components — how to look up specifications to solve a written or hands-on task.



Sukala: Electrical knowledge can make the difference between a good score and a medal.

CNC Machining

Paul Koontz,
Denford Inc.

Many of the contestants display technical skills but are lacking listening and organizational skills. The biggest technical skill that I see most contestants lacking appropriate levels of is math.

One last issue is that many contestants rush through the contest and make “dumb” mistakes.

Dental Assisting

Anna Long, Fort Hayes Metropolitan
Education Center, Ohio

We recommend that the contestant obtain a desk copy of Torres and Ehrlich's *Modern Dental Assisting*, sixth edition. Our committee used this text as a guide and reference for the 2002 Dental Assisting competition.

What skills do we find lacking? Infection control in dentistry. Moisture control. Disinfection and sterilization. Use of dental instruments and accessories, and impression materials. Laboratory procedures. Dental cements. Inventory management, dental insurance, radiation, employment and dental specialties.

Job Skill Demonstration

Sam Williams, Lamar Institute of Technology,
Texas

Many of our contestants fail to read the contest rules and scoring sheets.

Many contestants have a great demonstration but fail to introduce the audience to what they will be doing and what they will be using. The introduction and closing are worth a total of 20 points and can cost them a place in competition.

One of the other important skills is to discuss any item you bring to the demonstration. If you are not going to use an item, please leave it behind.

The last bit of advice, which is very important, is to practice your demonstration for as many strangers as possible to get over stage fright.



Koontz: Listening and organizational skills are important, as is math.

Graphic Communications

Jerry Himmelberg, Banta Publications Group

A good combination of both technical and soft skills is important. On the technical side, the students need to be “digitally driven” and understand how work flows through today's printing plant.

On the soft skills side, the students need to be good problem-solvers, have good communications skills, be open to change and make good decisions.

Of the two, probably the soft skills are most important. Printing today is more than just laying down ink on paper.

Preschool Teaching Assistant

Nancy Bartlett, Utah Valley State College,
Utah

An important skill is understanding how children learn: how children construct mental meaning through interacting with their environment.

Food and Beverage Service

Laura Eddy-Vogt, Eddys' Catering



Eddy-Vogt: Confidence and poise are necessary.

It is important to possess poise, cleanliness, uniformity in dress, positive disposition and an obvious service-oriented attitude toward the guest.

Contestants tend to lack confi-

dence and the ability to regurgitate menu specifics to the guests.

Carpentry

Keith Albright, Home Builders Institute

Safety skills and basic measuring and framing procedures are the basics for carpentry. I am always surprised by the lack of safety practices students display during competition.

Too often students arrive for competition totally unprepared. By this I mean that the student, instructor and advisor appear to have not reviewed the contest standards.

Some students have arrived without tools, claiming their instructor told them that tools would be provided.

Someone needs to work closer with the students prior to departure for the contest.

From the sideline to the frontline

BARRY ROCK went to his first state SkillsUSA conference and came away a changed man.

Rock got involved in 2001, when he began working for Delta Dental Plan of Massachusetts. His company sponsors an internship program for Northeast Regional Vocational Technical High School in Wakefield.

“I was in awe at what these young adults do for this organization and how much it has to offer them,” he says. “It is nice to see good things happening in high schools today.”

Rock plans to stay involved. In fact, he was recently elected to Massachusetts SkillsUSA's board of directors. ●

Building Maintenance

Marvin Miller, Millstream North Career Center, Findlay, Ohio
Competitors need to be able to bonnet scrub and extract carpets, in addition to stripping and finishing tile floors. Anybody can dust and sweep. I find that some states send students who haven't any experience with floor machines. At a national contest, the standards need to be high.



Miller: Come prepared to use floor machines.

Basic Health Care Skills

Leslie Menges, Ohio State University Medical Center

The most important skills? Content knowledge of CPR, first aid, human anatomy and physiology. Ability to maintain patient safety. And the character qualities of dependability, integrity and respect for self and others.

The skills most often lacking in our contestants are basic skills of reading, math and spelling.

Residential Wiring

Ken Haden, National Joint Apprenticeship and Training Committee

One of the most important skills, if not the most important, is organizational ability. There are several different modules to the competition, and each is accompanied by a couple of different prints, standards and instructions. Each module also uses several different types of electrical devices and materials. It is important for the competitor to be able to organize all of this information and all of these various parts in an orderly fashion to be able to successfully complete the contest.

I think most of our contestants lack time management skills when they arrive. A great number are unable to complete the contest in the time allowed.

Power Equipment Technology

Dave Worden, Kobler Co.

Contestants need to understand the basics in power equipment technology. This includes ignition, carburetion, electrical and the special items that belong to a particular manufacturer. They need to be able to diagnose a problem correctly the

first time and to be able to find out why something has failed.

Most common mistakes? Simple: they don't isolate and apply what they know. They attack a problem in a helter-skelter manner and throw parts at a problem, and they may eventually solve it but do not know what they did to solve it. Taking more time in understanding how something works makes it easier to repair.

Welding

Eugene Hornberger, Arcet Equipment Co.

The SkillsUSA Championships Technical Standards contains 126 competencies we expect competitors to have, 80 of which we deem to be essential. Competitors should at least meet the American Welding Society's entry-level welder requirements.

Common mistakes? Failure to read and understand instructions. Lack of knowledge of welding symbols. Lack of understanding on the use of weld measuring tools. Poor welding skills on aluminum.

Job Interview

Mitchell Slempp, Mid-America Technology Center, Wayne, Okla.

What's important? Salesmanship: enthusiasm, eye contact and voice volume. The ability to properly complete a job application. Responding to all areas on the application. Spelling and punctuation.

Common mistakes? Not having a thorough understanding of contest rules. Contestants bring only one copy of their résumé or a résumé of more than one page. Not including area codes. Incomplete addresses. Poor penmanship.

Promotional Bulletin Board

Ed Mann, University of Southern Mississippi

Most important? Ability to construct a bulletin board that addresses the criteria in the technical standards. Reading and following directions exactly. Presenting yourself to judges during the interview session. Making a 3- to 5-minute presentation that addresses all the items listed. Responding to questions from the judges with answers that make sense. Assembling the notebook according to the criteria.

Common mistakes include not reading the standards and not following the criteria for clothing, measurements and notebook.



Hatton: Understand theory behind electronics.

Electronic Applications

Don Hatton, Hatton Enterprises
What's important? The ability to troubleshoot electronic circuits. This requires thorough knowledge of electronics theory

and the ability to use test equipment.

In what skills are contestants sometimes unprepared? They do not know how to effectively use standard test equipment in diagnosing faulty electronic circuits.

Major Appliance Technology

Richard Ringer, General Electric Co.;

Tony Viera, Amana/Raytheon Appliances

What skills are most important? Reading schematics. Basic knowledge of electricity. Understanding and using meters in troubleshooting. Using torches and brazing. People skills: ability to converse and relate to customers. Using common sense and knowledge of fundamentals to properly diagnose the product failures.

Some contestants come unprepared in customer skills, knowledge of circuitry and basic electricity, fundamental diagnostic ability and brazing techniques.

Industrial Motor Control

Bob Baird, Independent Electrical Contractors

The standards for the contest do a reasonably good job of setting forth the technical requirements. Unfortunately, we frequently see a lack of preparation of competitors by advisors who haven't read or don't understand the standards.

Advisors, talk to past competitors. Realize that individuals working on industrial motor control don't only work on control logic, but also have to be able to install the equipment and wiring methods for both the power and control. Understand that competitors have to have a code book, and that an individual who has studied residential wiring really doesn't have enough preparation for motor control.

On the student side, overall I think they try hard to be prepared. They haven't been subjected to the pressure-cooker environment of a competition and freeze. Or they have a tough time translating a written description of the customer's motor-control needs to a logic diagram. ●



In Job Skill Demo, it takes dedication

MICHELLE PRICE, SkillsUSA's Region 4 vice president, is a double dipper. No, that doesn't mean she works at Baskin Robbins. Price is a two-time gold medalist in the SkillsUSA Championships.

A senior in the criminal justice program at Conroe, Texas, High School, Price (pictured at left) earned her gold medals in the "Job Skill Demonstration A" competition. Contestants demonstrate and explain an entry-level skill in an occupational area that's covered in another national event as well.

So, what's her secret? "Winning is a combination of things: time and dedication," Price says.

But there's more to it. According to Price, an important part of being a successful competitor is "knowing what you want and what it's gonna take to get there."

The hard work and dedication are all worth it, she says. "Once you are on stage [at the awards ceremony], you won't regret everything you put into it." ●

MORE TIPS AND RESOURCES

- ➔ Don't see your contest represented here? Get more tips in our online version just for currently active members. Visit www.skillsusa.org/champions/. Your login ID is skillsusa. Your password is insider.
- ➔ Always follow the most recent edition of the *SkillsUSA Championships Technical Standards*. Also check for late-breaking news in the annual April 15 update, online at www.skillsusa.org/april.html. The general Championships section is at www.skillsusa.org/skills.html.

Second Annual

Peyton Holland says, "It's the person who always strives to do better than their best who will excel in competition and in life." Here's how this double winner and others do it.



The national competition is several months away, but savvy competitors are getting ready for the challenge now. This is crucial, especially when you consider that every person competing in Kansas City, Mo., must first win local, state and sometimes regional contests to qualify as a national competitor.

How can you be the best in the nation? Listen to the men and women on the technical committees that set the national standards — not only for contests, but for what every new employee should know. Many of these experts also offer a hint of what's to come, technology-wise, in the 2004 update of the contest rules.

Residential Wiring

Ken Haden, National Joint Apprenticeship and Training Committee

Hands-on skills are critical to the residential electrician. It's extremely important to be able to install electrical wiring, fittings, apparatus and devices safely, correctly, quickly and in a workmanlike manner to remain successfully employed in the residential field. Most contestants have developed those skills to an acceptable level and are able to leave the contest area having installed impressive wiring systems.

Where we normally see deficiencies, however, is in some of the "softer" skills, like project planning and organization. There are quite a few elements and a lot of parts and pieces involved in the contest. If the contestants do not manage their time wisely, they will find that it is difficult, if not impossible, to complete all

INSIDER'S GUIDE to Competition

By Craig E. Moore

of the elements. Every year there are only a small percentage of our contestants who actually finish all of the elements and produce a functioning system.

So, it is important for the contestant to be able to quickly interpret the prints and job specifications, identify the correct parts and materials, plan the work and proceed with the actual installations. Arriving prepared with these soft skills will allow contestants to devote more effort to the productive tasks of installing and testing their completed electrical systems.

Winner takes all in Plumbing contest

ALBERT RICE knows what's needed to win at nationals. This *three-time* Plumbing medalist has one of each medal: gold, silver and bronze.

The Fayetteville, Ark., resident credits knowledge and determination. But he quickly adds a third important component: "Know the SkillsUSA handbook for the knowledge exam! If you tie with another competitor, this exam will determine the winner."

His advice to this year's competitors? RELAX! "Just get in a groove and do what got you there. Don't let stress cause you to make a mistake," says Rice, who is also national college/technical parliamentarian. ●

Telecommunications cabling is quickly becoming an expected "utility" in today's homes, pre-wired with the infrastructure to support voice, data and broadband information and entertainment distribution. To help prepare residential wiring students, the national technical committee will incorporate some of these elements into the revised technical standards.

Contestants can expect to see elements requiring the installation of twisted pair and coaxial cable, connectors and terminating hardware to support these telecommunications applications. These "structured" wiring systems will be installed in compliance with the current TIA/EIA 570 standards.

Nail Care

Judy Sheils, OPI Products Inc.

Contestants are judged at many skill levels. It is important that they be well rounded in their skill and knowledge of nail application, product placement, finishing, nail art and oral interview.

The skill I found that was lacking with the contestants was their ability to express themselves verbally when questioned during the oral interview. Example questions are, "What product would you recommend to your client to take home in order to maintain their nail service?" and "How would you answer a client who claims that her artificial nails keep lifting?"

CNC Machining

Paul Koontz, Denford Inc.

What skills are most important to have in this competition? Milling and turning. This is an upper-level challenge that requires considerable math skills to manually write the CNC programs.

The skill that I see lacking the most is the ability to assess the problem and approach it in a logical and systematic way. Many mistakes are made due to rushing and not being thorough.

Job Interview

Fielding Yost and Mitchell Slemp, Mid-America Technology Center, Oklahoma
Contestants must demonstrate enthusiasm and confidence in responding to interview questions. Common mistakes include not properly filling out a job application, i.e., not including area codes with phone numbers, ZIP codes with addresses and not responding with "N/A" when appropriate.



Prepared Speech

Craig A. Haugsness, Ph.D., State Department of Education, Kansas

Most important are strong writing skills, strong speaking skills, poise and the ability to speak to all the members of an audience, not just judges.

Contestants most often lack strong speaking skills and flexibility in presentation. Practice, practice, practice.

Architectural Drafting

Tom Bendorf, The Estopinal Group Inc.

The most important skills to have are problem solving and patience.

We have found that everyone knows how to draw with a computer, but we challenge the contestants to see how their problem-solving skills have been honed.

Many of the contestants have not had much experience in plotting to a file. The technical committee spends much of the setup day teaching the contestants how to plot for the contest.

The contest is designed to keep up with the CAD software. In years past, the contestants have had to know how to import DXF files, how to develop interior one- or two-point perspectives, how to calculate stair sections, and how to analyze and select information from manufacturer's catalogs. The board drafting portion is phasing out. It may or may not be a part of the 2004 contest.

Graphic Communications

Jerry Himmelberg, Banta Publications Group
Prepress and press skills are important. Contestants often lack the ability to focus and manage their time well.



Bendorf: Contest challenges problem-solving skills.

Bendorf, Jones photos: Ann P. Schreiber



Photo: Lloyd Wolf

Extemporaneous Speaking

James Maynard, Wicomico County, Md., Public Schools

What skills are most important? Organizational skills. Being able to relax in front of a group of people. Presenting the speech in an organized and cheerful manner.

What skills are often lacking? Improper dress. Lack of knowledge of the *SkillsUSA Leadership Handbook*. Being able to speak in front of a group of people with confidence in what they are saying.

Opening and Closing Ceremonies

Rex Jones, Georgia

Teamwork and coordinated movements, enthusiasm, poise, posture, eye contact, attitude, pronunciation and professional appearance are among the most important skills demonstrated in this contest.

Most of the teams participating in this contest have the skills that should be demonstrated.

What separates the teams in competition is that degree to which the skills are demonstrated.



Jones: Success is a matter of degrees in a competitive contest.

Welding

Eugene G. Hornberger, Arcet Equipment Co.

What's most often lacking is that contestants and their instructors are not familiar with the SkillsUSA regulations and special instructions issued by the technical committee. They are not adequately prepared for what will happen.

While we will add no new skills to the new technical standards, there are many skills in the current standards that we do not presently test but probably will in the future.

Building Maintenance

Marvin Miller, Millstream North Career Center, Ohio

It is important for students in the building maintenance field to have a higher level of knowledge of caring for a building than what a janitor may have. They will need to know how to refinish floors and extract carpets, along with being able to run all the necessary floor machines involved. Some come to nationals without the skills needed to operate floor machines safely.

Power Equipment Technology

Dave Worden, Kobler Co.

The most important skill needed is to know and understand basic theory. But more importantly, it is to apply that knowledge and not letting the fact that you are in a competition change your approach to your task at hand. Contestants seem to panic and watch how the others are doing. If you are solid in the basics and can keep your emotions in check, apply and work to your level, *not* the competition level!

The next edition of the technical standards will see transmissions and possibly electronic fuel injection, along with more wholegoods as opposed to component parts.

Electronics Applications

Don Hatton, Hatton Enterprises

The most important skills to have are a thorough knowledge of electronic circuitry and Ohms Law, and the ability to read and follow electronic schematics and logically evaluate and troubleshoot electronic circuitry using modern test equipment and supportive software.

Contestants often are not familiar with modern test equipment or how to use test equipment to troubleshoot complex electronic equipment. Many are not able to read and understand schematics necessary to analyze and repair electronic circuitry.

The current technical standards refer people to the Consumer Electronics Association, but people interested in the Electronics Applications standards should now connect to the National Coalition for Electronics Education Web site for curriculum information (www.ncee-edu.org). The NCEE is comprised of manufacturers, servicers and educators that were involved in the drafting of the original skills standards.

Confidence counts in Job Interview

Some people would rather go to the dentist than a job interview. PEYTON HOLLAND isn't one of them. For the past two years, he's won the national Job Interview contest. Holland sums it up in two words: self confidence.

"If I didn't show I had confidence in myself when I went into the interview, then the judges would have had no reason to put their confidence in me," explains the senior at Northwood High School in Pittsboro, N.C.

Any event's competitors "must always believe in themselves and in their abilities. If they have the confidence that they know they can win, then it's just a matter of finishing the project, speech or interview." ●

In Dental Assisting, nothing but the tooth

Two-time national medalist TIFFANY BARANOWSKI has won silver and bronze in the Dental Assisting competition. "I think to win a national medal, you have to love what you're doing and have a passion for it," she says.

Baranowski graduated from the dental technology program at Howard High School of Technology in Wilmington, Del., last summer. "I think I won twice because I wanted it. I wanted it with everything I had," she adds. "I studied hard, practiced hard and gave it my all."

Her advice is simple: Try.

"You can't win if you don't try. Just give it your all and if you don't win one year, try again the next. Never give up. I didn't." ●

Don't miss our next annual Insider's Guide!



Postmark your chapter roster by Nov. 15 to receive our

annual "Insider's Guide to Competition." This special issue of SkillsUSA Champions includes tips from national contest organizers, repeat winners and others with an inside track!

American Spirit

Mary Anderson, Deming, N.M., High School
Communication and creativity are important. But often contestants have not read the technical standards for the contest. When the next edition of the standards is released, an interview and page-count requirement will be added.



Anderson: Interview segment planned.

Dental Assisting

Anna Long, Columbus, Ohio, Public Schools
We recommend that the instructor obtain a desk copy of the latest edition of Torres and Ehrlich's *Modern Dental Assisting*. Our committee uses this as a reference. All areas of the curriculum will be represented in the competition, with yearly updates. The advisor's support and guidance is important, especially for adhering to uniform requirements.

This is a very challenging contest, and each year the scores are improving. We notice that contestants need to work harder on tooth anatomy instrumentation, radiology, business skills and laboratory skills. In the next edition of technical standards, we will continue to add new dental materials, especially in the operative, specialty and dental laboratory areas.

Internetworking

Bob Schoenherr, Cisco

Important skills are listed in the objectives on the Internetworking Web site (<http://216.103.196.2>). They include overall understanding of WAN and LAN technology; interpreting a work order; knowing IEEE and RFC codes; using subnets, ACL lists and router security, routing and routed protocols; and interacting with your tools. Personal communication skills and good documentation are also listed. Be on time and listen to all directions.

Contestants often lack skills in router security, subnetting, use of their own laptop, and documentation of the problem and solution. When the next edition of technical standards comes out, new skills added will be command line configuration of a Cisco switch and end-to-end network configuration and troubleshooting.

Collision Repair Technology

Darrell Andrews, State Farm

We have six segments in our competition: welding, refinishing, frame and unibody, metal finishing, estimate writing and plastic repair. Skills are needed in all or a majority of these segments to be competitive.

For welding, two areas were lacking in last year's contestants: failure to provide the proper weld size and rushing through the welding process warping the metal.

For refinishing, it was observed that some experienced difficulty in adjusting their equipment.

For frame and unibody, many of the contestants had a difficult time setting up the gauges for datum, and many did not follow the directions and placed the gauges at the wrong control points.

For estimate writing, identifying all the damage (missed items) and included and not-included operations were not considered (missed procedures).

For plastics, they had a difficult time identifying the different types of plastics.

In metal finishing, contestants should clean the finishing product for final appearance and be sure to work on the area where plastic filler is used first so they do not run out of time. Overall, contestants need to listen to instructions.

Aluminum welding will begin to be introduced for future contests.

Total Quality Management

Roger Coriell, Honeywell

The most required skills are the ability to work in a team environment and under pressure, problem solving, creative thinking and organizational skills.

Many students are weak in presentation skills, and some have problems with organizational skills. Overall, the students are well prepared and ready to work.

Every year something new and exciting is added to the Total Quality/Six Sigma arena. Learning and applying these new and innovative ways to work as a team and solve complex problems are always expected by the judges. ●



Andrews: Skills in six segments needed.

It may sound like an obvious tip, but according to SkillsUSA Championships experts, it's often overlooked: Read the rules. If you get the current *SkillsUSA Championships Technical Standards* and read your contest's rules, you will have an immediate edge on the competition.

That tip is just one of many common threads in an annual survey of the industry and education experts who design the national competitions. Here's another: Check the Web site at www.skillsusa.org/updates.html. Starting each November, contest updates are posted so competitors can get the latest news. Frequent changes follow, so keep checking.

And if you want to be the best in the nation, expect the top level of competition to be at a higher level than the state. It's surprising, but some come to nationals expecting to see the exact type of project they worked on at their state contest.

Finally, listen to the experts. In case you don't know the skilled and dedicated people behind the 2005 SkillsUSA Championships, SkillsUSA Champions magazine made the connection for you. What competencies were added to the new technical standards book? Where can



competitors go for additional information on the competencies to be tested? And — based on a brand-new requirement you may not know — what will be done with the résumés submitted by contestants? Read on!

Principles of Technology

David Michael, Lex La-Ray Tech Center (Mo.)

Be sure to follow the guidelines in the technical standards when writing your discussion paper. The discussion paper and the presentation need to contain more technical data. Use equations and mathematical analysis to support your findings.

Contestants overall need more experience in making their presentations. Make sure you have five copies of your discussion paper with you when the orientation session is held. These are handed in at that time for judges to review and grade.

Precision Machining Technology

Diyana Hrzic, AMT — Association for Manufacturing Technology

For more information, competitors can visit www.AMTonline.org. We will be launching our new site and will have all info there at www.nims-skills.org.

**Taken from the Winter 2005
issue of *SkillsUSA Champions*.**

WEB RESOURCES

- ➔ Prepare for state and national contests with SkillsUSA's new Contest Singles: www.skillsusa.org/singles.html
- ➔ Get contest updates online at: www.skillsusa.org/updates.html. This is updated often, so bookmark it!
- ➔ For general information, visit: www.skillsusa.org/skills.html
- ➔ Don't see your contest here? SkillsUSA Champions' online version has other contests and the full comments of the technical experts. See Page 4 to log in.

By Craig E. Moore



Photo: Lloyd Wolf

Down, but definitely not out

Tom Hinman, a graphic communications student at H.C. Wilcox Technical High School in Meriden, Conn., was hit head-on by a drunk driver in April 2004. The accident broke his left leg in five places, his pelvis in two and his right ankle.

Yet, Hinman still found the strength to compete at nationals in June, calling the experience "awesome."

His courage in the face of a seemingly impossible challenge is a great example of a true champion.

Commercial Baking

Brenda Helsing, Retailer's Bakery Association
For information in addition to the new technical standards manual, contestants can call the Retailer's Bakery Association's (RBA) Education Department and ask for more details. Also, RBA makes available a "sample" written test to instructors.

RBA will notify our membership that the students have provided résumés. If any baker would like to receive a résumé for their area, it will be passed along to them.

Telecommunications Cabling

Dick Glass, Electronics Technicians Association International

We have updated the Telecommunications Cabling knowledge examination and the hands-on practical examination assessments, merging those evolved for the 2003 and 2004 contests with the existing ETA Data Cabling Installer competencies (DCIC).

Competitors can go to the ETA Web site (www.etainternational.org) to check out the data cabling competencies. They are presented as major categories of knowledge, then as categories including the individual items or subcategories of

knowledge and skills, and as verbalized competencies. We also show a lab equipment listing that is aimed at school instructors.

Team Problem Solving

Diane Swenson, Montachusett Regional Vo-Tech High School (Mass.)

There are two parts to the competition: at-home project and at-nationals project. The team does not receive details about Part 2 until they are at nationals.

For the at-home project, be creative in reviewing and thinking of your response to the problem and preparation of your presentation. Remember, all team members must participate in the development of the presentation. The team does not have to be from the same shop, just the same school or school district.

At the national competition, remember standard SkillsUSA requirements, such as clothing, no names showing and so on. The problem will be building something, but it's different each year. Consider learning at home about building structures, how structures hold weight, how to create height in the structure, and how to work with small miscellaneous items such as pencils, toothpicks, craft sticks, clay, glue, paper clips and elastics.

Judges may be walking around while the team is solving the problem. Again, teams do not have to be from the same shop, just the same school or school district.

In solving the problem, the team has the flexibility to talk [to one another], move around and do what is necessary to work together, but the team will be constrained to a designated area size.

Automotive Service Technology

Susan Christophersen, GM Service Parts Operations/ACDelco

There is increased emphasis on environmental health and safety in the workplace, and we have incorporated that in our contest. Also, the use of electronic service manuals (on the computer) rather than paper manuals is directly in line with changes in the industry.

Competitors can find electronic service information on the Internet. All vehicle manufacturers offer subscriptions to this as well as some other companies: www.snapon.com, www.alldata.com and www.mitchell1.com.

For more about environmental health and safety, visit: www.osha.gov, www.epa.gov and www.funandeasylearning.com.

Many companies offer ASE [Automotive Service Excellence] test preparation information both in book form and as a computer-based training program. Go to www.asecert.org for more information.

We will use the contestant résumés as part of the requirements for the job interview segment of the contest.

Internetworking

Bob Schoenberr, Cisco Systems Inc.

We will be adding a technical phone support piece to the professionalism judging criteria.

Competitors can find more information on the competencies being tested on the Web site at: <http://216.103.196.2/skills/Technical%20Standards.doc>, or check out the frequently asked questions: <http://216.103.196.2/contestant2003.htm>. Our FAQ file shows contestants which mistakes are made most often.

We have been using student résumés since our first year as a piece of the professionalism [criteria]. They must e-mail us résumés (by June 5). Our Human Resources department then scores the résumés using the PDP rubric (see SkillsUSA's Professional Development Program, Level 3).



Christoperson:
Use the Internet for environmental health and safety requirements.



Schoenberr:
Résumés are scored using SkillsUSA's PDP as a guide.

Prepared Speech

Craig Haugness, Kansas Department of Education

The only rule change is to confirm that a podium or lectern will *not* be used in the Prepared Speech contest. To be successful, contestants need to thoroughly review the rules for the contest; write a thoughtful, strong speech; and practice, practice, practice.



Haugness: Seek opportunities to practice your speech before an audience.

They should seek out as many opportunities to present their speech to real, live audiences. The best place to get more information and the chance to practice will be with a contestant's state association and local school.

Student-submitted résumés will be shared based on industry requests.

Action Skills

Bob Larson, Penta Career Center (Ohio)

Special needs students need clear and precise information and guidance from start to finish, and it is the responsibility of the advisor to provide that. Advisors should attend the contestant meeting with their students to clarify things and prepare them to compete. Advisors can also alleviate the problem of contestants not having enough material prepared to make the minimum five-minute presentation. Some only last three to four minutes.

When advisors take the responsibility and provide the guidance needed to have the best experience possible, the contestants come away knowing that win or lose, they have done the best that they can.

Photo: Craig E. Moore



Speaking for all ages

During the 2004 national conference, two Prepared Speech contestants were the youngest and oldest registered competitors in that contest.

Eleanor Murtagh, age 14, attends Minuteman Tech in Lexington, Mass. Ann Voyles, 67 years young, came from Metro Technology Center–South Bryant in Oklahoma.

When the medals were presented, one of these champions gained another distinction by winning the gold: Voyles.

Pride of the family

Many students have family come with them to the SkillsUSA Championships for encouragement. Colorado's Justin Dignan brought his own cheering section. Ten close relatives drove 600 miles from the Denver area to see him compete in Kansas City. "As soon as they heard about it, they all decided they wanted to go," says the Electronics Technology contestant, whose mother ordered the attention-grabbing T-shirts. "Everyone wanted their picture taken with them and wished me good luck. It was pretty cool."

Photo: Lloyd Wolf



TeamWorks

Lillian Hoyos, The Stanley Works

The technical committee sends competitors CDs with tips on what is expected. Some detailed masonry skills were added in the new technical standards. Window flashing was also added.

TeamWorks requires each team to do a presentation on how they plan to complete the project, which is intended to simulate the real-world experience of bidding on jobs. Résumés will be reviewed as someone planning to hire a mason, carpenter, plumber or electrician would.

A new requirement for 2005: Teams will need at least two of their team members to have OSHA certification prior to competition. For every additional member with the OSHA certification, points will be awarded to the team. To get the OSHA certification test, go to: www.skillsusa.org/careersafe.html.

Masonry

Bryan Light, Southern Brick Institute

The project will be judged with a great deal of importance slanted toward quality. The written portion of the competition and the speed of the competitor will not compensate for technical mistakes in

the construction process. While understanding the reasons for a particular design, and the rate in which a student can erect it is important, the poor quality that is now commonplace in the industry must be addressed.



Experts' Photos: Ann P. Schreiber

Light: *Speed of construction won't compensate for lack of quality and attention to detail.*

My advice to this year's contestants is to find a pace that will allow you to give close attention to detail. Speed of construction will come in time.

Community Service

Patrick Kirby, *The Timberland Co.*

We want to emphasize the importance of clearly articulating the degree of impact community projects have had. Competitors should review the Kellogg Foundation's *Logic Model Development Guide* (www.wkkf.org/Programming/Overview.aspx?CID=281) for tips on measuring the outputs, outcomes and



Kirby: Remember to measure the degree to which your activity has improved the situation.

overall impact of their community service projects.

This guide includes a simple example of a logic model (the thinking beyond *why* the project took place and behind what impact was sought from the outset) and some good ideas for how to develop clear and measurable

outcomes. Remember, you are measuring the degree to which your activity has improved the original situation.

Architectural Drafting

Tom Bendorf, *The Estopinal Group Inc.*

At the orientation prior to the contest, competitors must decide whether to use computer or manual board drafting to solve elements of the contest.

A 3½-inch disk is addressed in the technical standards. The technical committee will continue to provide these. Since many computers no longer have this drive available, we will permit USB flash drives and recordable CDs.

Residential Wiring

Ken Haden, *National Joint Apprenticeship and Training Committee*

Requirements were added in reaction to increased demand in residences for structured cabling systems that support home data and telecommunications networks and the distribution of broadband services.

For information, refer to the following sources: *Complete Data Cabling Installers Certification*, available from Prentice Hall,

1-800-282-0693; *Residential Network Cabling* (www.mcgrawhill.com), 1-877-833-5524; and *Configuring and Installing Structured Wiring Systems*, available soon from NJATC (www.njatc.org). Sources on the Internet: VDV Academy Wiring Self-Study Program (www.jimbayes.com/uncleted/index.html); Network Cabling Help (www.datacottage.com/index.htm); and An Educator's Guide to School Networks (<http://fcit.usf.edu/network/default.htm>).


Contestant résumés will be forwarded to their local IBEW/NECA training centers for possible apprenticeship recruitment.

Dental Assisting

Anna Long, *Fort Hayes Metropolitan Education Center*

Added to the technical standards: infection control, moisture control, disinfection and sterilization, dental instruments and accessories, impression materials, laboratory procedures, dental cements, inventory management and radiation. For more information, we recommend a desk copy of the latest edition of Torres and Ehrlich's *Modern Dental Assisting*.

Never forget that each contestant is a winner. Relax and enjoy the experience. ●



SkillsUSA Championships Technical Standards (2005–2007)

Video Clip

If you've never been to SkillsUSA's National Leadership and Skills Conference (NLSC) in Kansas City, Mo., this 8-minute video will give you a brief glimpse of what to expect.

Entitled "A Week of Champions," this piece details the day-to-day activities of a recent NLSC, from the inspiration of the Opening Ceremony and the perspiration of Thursday's SkillsUSA Championships to the tears and celebration of Friday night's Awards Ceremony.

[Click here to view the video.](#)

You may order a DVD of this video at:
www.skillsusa.org/store

To view this video, you'll need a copy of RealPlayer installed on your computer. If you don't have RealPlayer, you can download a free version at www.real.com. (Make sure you look for a link to "Free RealPlayer," as they also offer higher-end versions for sale.) Follow the installation instructions after downloading. You may need to restart your computer before you're able to use the software. If you experience any other problems playing the video, view the ["Help"](#) section of this document.

Web Links

The following links will serve as valuable resources related to the SkillsUSA Championships and this edition of the Technical Standards. Clicking on the link will open the page in your Web browser.

[SkillsUSA Home Page](#)

It all starts here. This is the official home page for the national SkillsUSA organization. Here you'll find an exhaustive amount of information covering every aspect of SkillsUSA.

[April 15th Update](#)

The SkillsUSA Technical Standards is updated every three years, but contests may still change slightly between updates. Every April 15th, the national organization releases a list of any changes made to existing SkillsUSA contests. This very important page is where you'll find those changes, a must for staying up to date with contest rules and regulations.

[World Skills Competition](#)

Held every other year, the World Skills Competition is a chance for national winners to become international champions. Find out who's on the most current team and keep track of their progress as TeamUSA goes for the gold!

[Contest Information](#)

This page is the gateway to numerous other links related to the SkillsUSA Championships. Find capsule descriptions of each contest, rules for new demonstration contests, tips and more.

[Educational Materials Catalog](#)

Purchase educational materials online using our secure server. You'll find items like the Progressional Development Program, posters, software, DVDs, and much more.

[Midwest Trophy](#)

This is where you can order official SkillsUSA clothing, as well as numerous other SkillsUSA-related items.

[Goodheart-Willcox Publishers](#)

Home page for the sponsors of this edition of the SkillsUSA Championships Technical Standards.

SkillsUSA Championships

Technical

2005 – 2007

Standards



Leadership Development Contests



Health Occupations Contests



Occupationally Related Contests



Trade, Industrial and Technical Contests




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ACKNOWLEDGMENTS

The SkillsUSA Championships Technical Standards is the “bible” of rules and regulations for SkillsUSA Championships competitions. This publication results from literally thousands of hours of effort and many years of technical expertise. Business, industry, labor and education have developed a unique partnership, combining talents to develop these standards. This edition profiles core competencies in more than 70 occupational and leadership subjects, competencies that not only provide the outline for success in SkillsUSA competitions, but also build the platform for an industry-based set of national skills standards for occupational training.

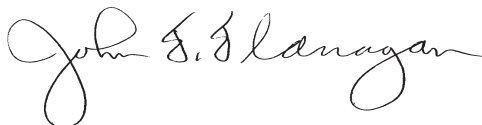
About 600 business, industry and labor experts comprise our SkillsUSA Championships national technical committees. These experts select the skills to be judged, the format of the contests, and the criteria by which the contestants will be evaluated. The SkillsUSA Championships Technical Standards is the product of their joint efforts to clearly identify real-world expectations for the performance standards that students in career and technical education should be achieving. The process of the SkillsUSA Championships is, therefore, one of the most direct and effective pipelines from business to public education anywhere in the U.S.

The production of an event such as the SkillsUSA Championships would not be possible without the selfless support and cooperation of hundreds of individuals and organizations that believe in our program objectives and in the impact of their labors on the lives and careers of SkillsUSA students. Each company and organization has invested a great deal of time and effort in the creation of the SkillsUSA Championships Technical Standards 2005-2007. Each wants to improve the quality of our nation’s technical education programs and to better prepare students for rewarding careers. It takes many people working in concert to make SkillsUSA and our students successful. On behalf of SkillsUSA, I thank our technical committees for their indispensable and highly-valued service to the team. A note of gratitude also belongs to Goodheart-Willcox for sponsoring this publication.



Eric V. Gearhart
Director, Business and Industry Partnerships
SkillsUSA

Goodheart-Willcox Publisher is extremely proud to support career and technical education by sponsoring the SkillsUSA Championships Technical Standards 2005–2007. As a leading publisher of textbooks and supplements for industrial and technical education, Goodheart-Willcox Publisher believes in the goals of SkillsUSA and is honored to be a partner in the skill development of youth for “higher education.” Every participant is a success story! We applaud the contestants and their advisors for leading our nation and society into the future.



John F. Flanagan
President, Goodheart-Willcox Publisher

These regulations are in effect for the 2005, 2006 and 2007 SkillsUSA Championships

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INTRODUCTION

The SkillsUSA Championships has been called the showcase of technical education. The SkillsUSA Championships recognizes career and technical students who excel in their occupational areas, as well as in the leadership development activities that are such an integral part of the SkillsUSA program in the classroom.

The involvement of industry in the SkillsUSA Championships program is essential. Leadership, health occupations, trade, industrial and technical experts donate their time to serve as contest judges and as technical committee members. They assume responsibility for selecting the skills which are to be judged, determining the format of the contests and establishing the standards by which contestants will be judged.

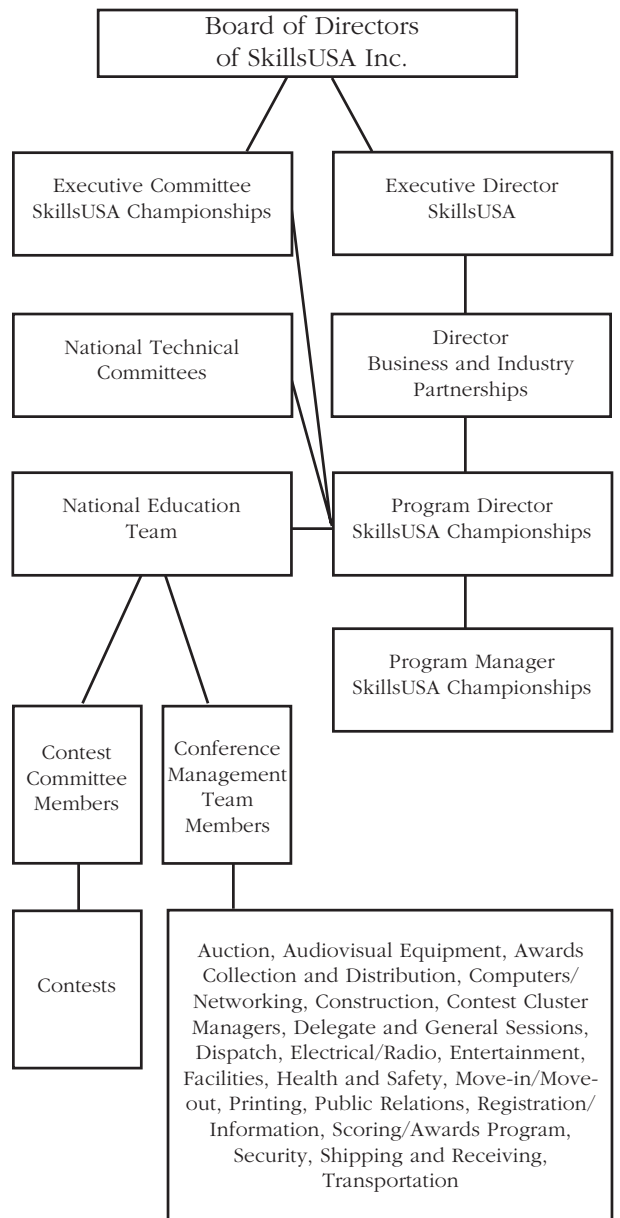
Besides showcasing students' skills, the SkillsUSA Championships, by the very nature of competition, urges students to take pride in their work. It also provides prospective employers with an opportunity to see dedicated, motivated potential employees at work.

To continue to meet the needs of both these potential employees and prospective employers, the lines of communication between technical education schools and industry must be kept open. Educators need to be able to identify industry's needs and, in turn, develop appropriate curricula.

SKILLSUSA CHAMPIONSHIPS ORGANIZATION

The SkillsUSA Championships is governed by policies established by the Board of Directors of SkillsUSA Inc. These policies cover donations and awards, SkillsUSA Championships committee composition and responsibilities, and National Leadership and Skills Conference host state responsibilities.

The SkillsUSA Championships is organized as follows:



INTRODUCTION OF NEW CONTESTS

There are many requests for the establishment of “new contests” in the SkillsUSA Championships program. In determining the addition of new events to the SkillsUSA Championships, either for demonstrations or for final approval as an official contest, the staff of SkillsUSA will apply the following principles as a test of need:

1. There is a significant number of members in SkillsUSA who want the contest. If the instructional area related to a potential contest is outside of the normal service areas of technical, skill and service occupations, including health occupations, or overlaps with other traditional service areas (e.g., culinary arts in home economics), a special study of the numbers of members SkillsUSA serves must be made and a case must be made on that basis to the SkillsUSA board of directors.
2. There are jobs in the occupation and an industry that is nationally significant. The industry is willing to provide support to the contest.
3. For highly regulated or industry certified programs, if there are not enough training programs in the country to merit state contests in each state, the board may decide that contestants who win locally may come directly to the national competition if certified by their state. (More than one from a state can enter the contest.)
4. There will be only one skill contest for each instructional program that is commonly taught as an occupation or closely related group of occupations. However, two or more contests may be offered if a case can be made that, at entry into the field, substantially different occupations and skills need to be taught in the same instructional program (e.g., a graphics program teaching photography, printing and commercial art, or a drafting program teaching architectural and technical drafting).
5. Special attention should be given to areas of new and changing technology as driven by industry.
6. Leadership contests will be added based upon solid proposals from the memberships that indicate:
 - value to students in relationship to future employment
 - demonstrated support from the membership, verifying potential participation

The following steps must be followed before a new contest can be approved:

1. A minimum of 10 state associations must support the addition of a new contest for a contest to be seriously considered.
2. A SkillsUSA Championships technical committee will be established to develop contest rules and establish the necessary support for introducing the contest.
3. The contest will be introduced via a demonstration at the National Leadership and Skills Conference, which includes the SkillsUSA Championships, at least one year prior to official inclusion into the SkillsUSA Championships.
4. Preliminary contest rules will be printed and distributed to all state directors by Nov. 1 preceding the demonstration, with states invited to conduct the contest and participate in the national demonstration.
5. Contest operation and regulations will be reviewed by a committee of state directors, technical committees and national staff to determine feasibility of official inclusion of the contest in the SkillsUSA Championships.
6. Official inclusion of new SkillsUSA Championships contests will be approved by the SkillsUSA board of directors.
7. Contest rules may be published as supplements to the official SkillsUSA Championships Technical Standards as new contests are developed and implemented.
8. New areas for contests may be demonstrated to solicit support from the states to justify the organization of a demonstration contest the following year.

GENERAL REGULATIONS

1. These SkillsUSA Championships Technical Standards are written as guidelines for the administration of national contests. They should serve as models for administration of local, regional and state contests but should not be considered binding for state associations in conducting state SkillsUSA Championships.
2. All problems and exercises mentioned in the SkillsUSA Championships Technical Standards are sample exercises only.
3. A careful and thoughtful analysis of the skills and knowledge required for successful employment in technical, skill and service occupations, including health occupations, will identify a core of technical and scientific principles that students should understand. Knowing these principles will increase their chances of succeeding and progressing in their fields and form a basis for understanding and applying new technology as it is introduced in their respective fields. Competitors are expected to understand such principles as they apply to their skill areas. They will be expected to know and demonstrate the following:
 - a. Mathematics
 1. Addition, subtraction, division and multiplication of whole numbers, common fractions, decimal fractions, ratio, proportion, percentage, average, area, volume, metrics and written problems specific to area of training
 - b. Engineering drawing/print interpretation and schematics related to specific areas of training
 - c. Reading comprehension/interpreting technical manuals
 - d. Completion of a job application form
 - e. Making an appointment for a job interview
 - f. Proper interview techniques
 - g. Responding clearly to oral questions
 - h. Safety knowledge (Some contests require evidence of safety training. Students are encouraged to complete the Occupational Safety and Health Administration's (OSHA) 10-hour Web-based CareerSafe course. For information, please visit the Web site at www.careersafeonline.com. Participants completing the safety training course will receive a wallet card from OSHA).
4. Begin checking SkillsUSA's Web site in November for any changes to these printed guidelines. All changes to the current year's competitions will be posted by April 15. The Web address is www.skillsusa.org/april.html.
5. **Professional Development Program (PDP) Test:**
 - a. Each individual contestant in both leadership and skill contests will be given a test taken from Levels 1 through 2 and the SkillsUSA manual of the Professional Development Program (except Action Skills, Building Maintenance and Quiz Bowl contestants). The following procedures will apply:
 1. The tests will be administered by the state directors at the National Leadership and Skills Conference before the SkillsUSA Championships begins.
 2. The test results will be used in the event of a tie to determine first-, second- and third-place winners only.
 - b. **Skills-Related Written Test:**

Written tests and problem-solving exercises covering skills and related information will be included as a part of each contest (with the exception of Action Skills and Building Maintenance contests). The number of points allowed will not exceed 15 percent of the total possible points and will be determined by the technical committee. The following procedures will apply:

 1. The test will cover the appropriate math, technology, schematic/engineering drawing/print interpretation, safety, problem solving and related information needed for employment.
 2. The test will be prepared or approved by the SkillsUSA Championships technical committee and may be given at the contest orientation meeting or on the day of the contest.
6. An oral professional assessment, such as a personal interview, explanation of skills to be performed, problem to be solved, or other employability skills assessment, will be included as a part of each contest. The number of points allowed will not exceed 10 percent of the total possible points and will be determined by the technical committee.
7. All competitors (except Action Skills and Building Maintenance) will be required to bring a one-page, type-written résumé and submit it to the national technical committee at the contestant orientation meeting. The résumé may be used by the technical committee for the oral professional assessment segment of the competition. A penalty of 5 points will be assessed for failure to submit a résumé.
8. Competitors in contests that require verbal presentations must use the proper name of the national organization, "SkillsUSA." Contestants in American Spirit, Chapter Display, Community Service, Occupational Health and Safety, Outstanding Chapter, Promotional Bulletin Board and Tech Prep must exhibit the organization's proper name and logo. Failure to do so will result in penalty points being assessed by the national technical committee. Visit our Web site, www.skillsusa.org/logos2.html, for proper use of the logo.
9. There must be at least 12 contestants/teams in each official contest for the contest to be held. (Exceptions are Chapter Display, Occupational Health and Safety, Outstanding Chapter, Promotional Bulletin

- Board and health occupations contests.) In the event that fewer than 12 contestants participate for two years, the contest may be discontinued pending a decision by the SkillsUSA board of directors.
10. SkillsUSA Championships awards will be presented to the top three contestants in each division except for contests judged to a standard.
 - a. No ties will be permitted.
 - b. In addition to the first-, second- and third-place medallions, national finalists will be recognized with appropriate certificates. Designation as a finalist will be determined by the state association.
 - c. Decisions of the judges will be final. Interpretations of all contest rules will be made by the director of the SkillsUSA Championships.
 11. The competencies listed in this publication under each occupational area are the basis for a quality technical program from which our national contests are derived. They have been listed to provide direction and assistance to state associations as they establish their district and state SkillsUSA Championships and to identify the scope of the national contest.

Who May Compete

12. Participants must be active SkillsUSA members in their respective divisions whose dues have been postmarked by midnight of March 1.
 - a. A policy exists whereby exceptions may be made under certain conditions. For details, contact your state SkillsUSA office.
13. Each national contest provides for individual entries unless the rules of the contest state that it is a team competition.
 - a. High school contestants are students enrolled in a coherent sequence of courses or career major that prepares the student for further education and/or employment related to technology, the health industry, trades or industry and is earning credit toward a high school diploma/certificate or its equivalent during the school year immediately preceding the National Leadership and Skills Conference.
 - b. College/postsecondary contestants are students enrolled in a coherent series of courses or career major that prepares them for further education and/or employment related to technology, the health industry, trades or industry and who are earning credit toward a college/postsecondary degree/certificate during the school year immediately preceding the National Leadership and Skills Conference.
Note: College/postsecondary contestants may compete for only two years in the same contest.
14. Individual contestants may enter only one SkillsUSA Championships contest. Participation must be approved by their state association.

15. Participants in national contests must be first-place winners selected on a competitive basis at the state level. In the event the first-place winner is unable to participate, the alternate must be the next highest-placing contestant at the state level who is able to participate. All contestants must qualify through state SkillsUSA approved contests. States may be disqualified from participation in a specific contest if they approve contestants who have not competed in a state contest.

The ability of the contestants to meet the standards of national competition must be considered before they are certified by the state association.

16. Participants must meet the eligibility requirements set forth in each contest description.
17. **Judging Criteria**
 - a. The judging criteria listed on each contest rating sheet contain the basic elements that will be considered in the evaluation of the contestants' performance. The exact number of items evaluated and points assigned to each criterion may change from year to year depending on the complexity of the project.
 - b. The rating sheets are intended to give contestants and advisors a basic understanding of the evaluation criteria and serve as a guide as they prepare for national competition.

Release of Contest Results

18. An analysis of contestant scoring and a ranking of the contestants will be available and accessible to every competitor on the SkillsUSA Web page within one week following the close of the national conference. The ranking of all competitors will be available and given to the state directors (or their appropriate designees) at the closing ceremonies on Friday night.
19. The appropriate state official agrees not to use this information in any way that will violate any local, state or federal law and will protect each student's right of privacy as required by law.

How to Register

20. Only properly registered participants may enter SkillsUSA Championships contests. Proper registration requires:
 - a. Submitting official National Leadership and Skills Conference (NLSC) registration forms by the deadline (May 1, or 10 days following the state SkillsUSA Championships).
 - b. Attending the mandatory contest orientation meeting. This meeting will be held at the NLSC site in advance of the competition as announced in the conference program.
21. No changes in contestant registration will be made within five days of the opening of the National Leadership and Skills Conference.

22. Provisions are made for alternates to be officially registered in every contest. The entry of individuals who are officially registered as alternates for specific contests will be considered as a change in contestant registration, and such alternates may compete in the national contests upon notification of the SkillsUSA Championships director at least 24 hours prior to the opening of the national contests. Alternates for team competitions should be specifically identified as such.
23. Contestants must wear their official contest clothing and report to the mandatory contest orientation meeting, as scheduled in the conference program, for instructions from the technical committee chairs. This is a critical meeting, since technical committee chairs provide specific contest instructions and many times administer the written and oral tests at this meeting.

Clothing

24. Participants must meet clothing requirements for the individual contests. For specific requirements, refer to the individual contest regulations.
 - a. The penalty for contestants who do not satisfy the dress requirements will be a maximum of 5 percent of the total possible contest points.
 - b. All contestants are required to wear their official contest uniforms or official SkillsUSA attire to the awards ceremony when the winners are announced and the industry awards are presented. Inappropriately dressed contestants will be denied access to the awards platform.
25. During the contest, participants must work independently, without assistance from judges, teachers, fellow students or observers. Contestants will be disqualified for receiving such assistance.

Tools and Materials

26. Participants who do not bring the required tools and materials, as specified in the individual contest regulations, may be penalized two points for each item missing. Such penalty will be assessed by the contest chair. The contest chair may, at his or her discretion, furnish the required item(s) but may assess the two-point penalty per item.
27. It is strongly recommended that toolboxes not exceed 9"x14"x22". Contestants may bring more than one box. Toolboxes that are bigger or cannot be carried by one person should have casters, wheels or a hand truck for movement to and from contest areas.

Observer Rules

28. It is in the spirit of competition and good sportsmanship to demonstrate professional courtesy to other competitors. Contestants shall in no way disrupt or interfere with the work or performance of fellow contestants or teams. Any contestant or team found to be in violation of this regulation may be at the risk

of penalty or even disqualification in the case of a serious violation.

29. A roped or otherwise marked area will be designated for observers. No observers, including SkillsUSA advisors, will enter the designated contest areas without the approval of the SkillsUSA Championships technical committee.
30. No observers will talk or gesture to contestants.
31. Judges will disqualify contestants who accept assistance from observers.
32. No observers will be permitted in the contest holding room or at the contest orientation meeting unless specifically invited by the SkillsUSA Championships technical committee.
33. Additional limitations on observers, such as entering or leaving a contest area during a demonstration or sequence, may be posted to protect contestants from unnecessary distractions.
34. The technical committee chair may close the contest to observers if observers are seen to be communicating or aiding a contestant in any way or if safety demands such action.
35. Neither cameras with flash attachments nor recording devices of any kind will be permitted in any contest area without the consent of the SkillsUSA Championships director.

Contestants with Special Needs

36. The SkillsUSA Championships management team will make every effort to provide assistance/accommodations, as appropriate, to create equal opportunities and a level playing field for all contestants. No assistance will be provided that could be interpreted as giving the special needs contestant an unfair advantage. Advanced identification of the contestants and their special needs will be required. The following are examples of the types of assistance that are allowed:
 - a. Special tables will be allowed for contestants who need to use wheelchairs.
 - b. Signers will be allowed to translate oral instructions given by the technical committee to deaf or hearing-impaired contestants.
 - c. Special tools and devices will be allowed for contestants with prosthetics or physical challenges such as a club foot, burn injury or amputation.
 - d. Contestants with dyslexia or other learning disabilities will be allowed assistance as determined by the complexity of the contest assignment.
 - e. Readers will not be allowed in contests where the use of technical manuals is required.
 - f. Hearing impaired contestants will be provided signers at contest orientations, startup of the competition (and throughout the day if required by the technical committee), and for the contest debriefing.

Models/Assistants

37. Nail Care models and assistants in Action Skills, Job Skill Demonstrations A and B and Principles of Technology must be SkillsUSA student members. They are not considered contestants and are not (with the exception of those participating in Action Skills) required to attend contestant orientation meetings.

SkillsUSA Championships Clothing Requirements

1. Contestants in the SkillsUSA Championships must wear the approved SkillsUSA Championships clothing or work uniform specified for their particular contests during competition or be subject to a maximum penalty of 5 percent of the total points.
2. The clothing items referred to in these regulations are pictured and described in the SkillsUSA Merchandise Catalog, published annually by Midwest Trophy Manufacturing Co. Inc., the official SkillsUSA Supply Service. To request a catalog or place an order, call 1-800-324-5996 or FAX 1-405-672-1308. Or, visit the Web site at www.mtmrecognition.com/skillsusa/.

Note: Contestants with special needs regarding clothing requirements should contact Midwest Trophy. If satisfactory arrangements cannot be met in regards to clothing, the contestant may obtain a waiver from Midwest. The original official red blazer and windbreaker style jacket with the old “SkillsUSA–VICA” or “VICA” emblem patch may still be worn.

3. The clothing requirements apply only to the national contests. State associations may have different dress requirements for their own SkillsUSA Championships program.
4. Official attire as indicated for specific contests refers to the following: **For men:** SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes.

Note: T-shirt-style tops are not approved.

- a. All personal jewelry should contribute to a businesslike appearance. Only official SkillsUSA jewelry is to be worn on a SkillsUSA blazer, windbreaker or sweater. Official jewelry is described as: conference, SkillsUSA emblem, officer, Statesman’s Award (one only) and Professional Development Program (one only) pins.

5. **SHOES:** No canvas, vinyl, plastic or leather athletic-type shoes, open-toe or open-heel shoes are permitted in any SkillsUSA Championships event without penalty. Contestants may be disqualified where improper footwear constitutes a health or safety hazard. When leather work shoes are required: “work shoes” are technically defined as low- or high-top leather, lace-up shoes with rubber, skid-resistant soles. They can be steel- or non steel-toed. Work shoes can be purchased very inexpensively at any local department store and in most mail-order catalogs. Western-style (cowboy) boots are not allowed, except Roper-style boots that are all leather, round-toed, flat-soled, with a low heel.
6. **SAFETY GLASSES** where specified must meet OSHA standards. Prescription safety glasses must also have side shields or must be covered with goggles. Also acceptable are safety glasses or goggles in the SkillsUSA Merchandise Catalog (published annually by Midwest Trophy Manufacturing Co. Inc.).
7. Contestants with long hair that poses a possible safety or sanitary hazard must wear hair containment devices or hairnets.
8. Contestants may be **disqualified** for lack of safety clothing or attire and not allowed to participate.
9. Contestants may wear suspenders unless otherwise specified in specific contest rules, but the suspenders must be white. The wearing and color of any other accessory items (such as belts) is optional unless otherwise specified in the contest rules.
10. **Occupational or career patches**, competitor patches and Professional Development Program (PDP) patches may be worn on the left shoulder or above the left pocket without penalty. **However, they are not required.**
11. No identification of the contestant, school or state is allowed on official clothing.
12. See specific clothing and safety requirements under each contest.
13. The penalty for those who do not satisfy dress requirements will be 1 percent to 5 percent of the total possible contest points. Clothing penalties in all skill contests will be assessed by the designated state director in cooperation with the contest chair. SkillsUSA Championships technical committees will assess clothing penalties for all health occupations, leadership contests and occupationally related contests.

INSTRUCTIONS TO SKILLSUSA CHAMPIONSHIPS TECHNICAL COMMITTEE CHAIRS

General Responsibilities

1. Attend all meetings called by the SkillsUSA Championships director or officially designate a committee member to serve as your authorized representative at those meetings.
2. Make sure that all committee members are familiar with the SkillsUSA Championships Technical Standards.
3. Supervise the selection of the skills to be tested in the national contest, and identify necessary equipment and supplies. Make arrangements for borrowing and/or soliciting donations of all items.
4. Supervise the development of contest projects, drawings and instruction sheets for the contestants.
5. Locate individuals who are knowledgeable in your contest trade or skill area and invite them to serve as judges. (Reminder: Send thank-you letters to the judges after the contest.)
6. Plan the layout of the contest site. Identify needs and services such as water, electricity and compressed air.
7. Make arrangements for acquiring appropriate industry awards.
8. Plan and conduct the mandatory precontest orientation meeting.

Contest Orientation Meeting

The contest orientation meeting is mandatory for all SkillsUSA Championships participants. The purpose of this meeting is to review the following items with all contestants.

1. **Contestants' Credentials:** Verify each contestant's name and number as they appear on the name tag with the master list of contestants.
2. **Contest Rules:** Check to be certain that all contestants are familiar with the contest rules and have been notified of any relevant information in the April 15 contest updates.
3. **Contest Procedures:** Explain the way in which the contest will be run, including schedule, procedure for time in/time out, rating criteria, procedure for breaking ties and method of dealing with problems.
4. **Safety Regulations:** Review general and specific safety requirements and procedures for the contest.
5. **Tools and Materials:** Go over the list of tools and materials that are to be supplied by the contestants. Include any additional items mentioned in the update. If contestants do not have all the required items, be sure they understand that they must obtain them before the contest begins.

6. **Work Stations/Order of Performance:** If workstations are not identical, make sure contestants draw numbers for assignments. In contests where the order of performance is important, the procedure for determining the order should be explained.
7. **Equipment:** Take time to explain the operation of equipment with which contestants may not be familiar, including safety features. If possible, allow contestants time to become familiar with the equipment.
8. **Special Announcements:** Detail any special functions that the committee has planned; explain special transportation or time schedules; announce industry awards; and announce that contestants are not permitted to smoke during the contest. (Note: The national organization requests that all SkillsUSA Championships committee and contest personnel refrain from smoking and/or consuming alcoholic beverages in the presence of SkillsUSA members.)
9. **Contestants' Questions:** Encourage contestants to ask any questions they may have about the SkillsUSA Championships. Try to give satisfactory answers before the close of the contest orientation meeting.
10. **Contestant Penalties:** There may be special circumstances that prevent a competitor from attending the contest meeting (e.g., illness, accidents or transportation). Please do not disqualify a competitor without first consulting with the SkillsUSA Championships office.

Conducting The SkillsUSA Championships

1. Check all contest area facilities prior to the day of the contest to be certain that everything is in place and in order for a smooth-running competition.
2. Assemble all judges at the contest site prior to the start of the contest for a briefing. Be sure that all questions are answered and that the rating procedures are clear.
3. Check to be certain that all contestants have brought the tools and materials required for the competition. The technical committee may, at its option, furnish any required items that contestants have failed to bring; **however, a two-point penalty may be assessed for each missing item.**
4. Make sure that all contestants meet clothing requirements for the contest. (See the section on SkillsUSA Championships Clothing Requirements in the individual contest regulations.) The penalty for those who do not satisfy dress requirements will be 1 percent to 5 percent of the total possible contest points. Clothing penalties in all skill contests will be assessed by the designated state director in cooperation with the contest chair. SkillsUSA Championships technical committees will assess clothing

- penalties for all health occupations, leadership contests, Action Skills and Job Skill Demonstrations A and B.
5. Make sure that all contestants receive copies of the project to be completed as well as any necessary drawings, instruction sheets or other materials. Be certain that contestants understand all instructions and have a chance to ask procedural questions. Take great care to see that all contestants have equal time and their questions are answered fairly.
 6. Oversee the contest to ensure that safe work practices are followed.
 7. Do not permit contestants to enter the contest site at any time unless they are displaying their contestant badges and numbers.
 8. Do not permit contestants to smoke during the contest.
 9. Conduct a critiquing session with the contestants after the contest to point out general strengths and weaknesses and the quality of work expected by the judges.
 10. Verify all judges' rating sheets and submit them to the SkillsUSA Championships scoring management team.
 11. Complete the chair's final report and return it to the SkillsUSA Championships headquarters following the contest.
 12. Keep the results of the contest confidential until the announcement of the winners at the awards ceremony.
 13. Attend the awards ceremony to present medals to the winners.
 14. Organize and supervise the tear-down of the contest area and be certain that equipment, tools and supplies are returned to the proper owners.
- c. Materials and equipment
 - d. Last-minute details
 - e. Rating sheets
 6. Judges will evaluate the performance of each contestant according to the criteria listed in each contest.
 7. Judges will identify contestants by number only. Judges will not use contestants' names, schools or states unless otherwise specified in individual contest rules.
 8. Judges may attend the contest orientation meeting held prior to the opening of the SkillsUSA Championships. However, only members of the technical committee may instruct the contestants and verify attendance.
 9. Judges are selected because of their recognized expertise in the trade or skill which they are being asked to judge and are asked to follow the official SkillsUSA rules without inserting personal opinions. Such things as length of hair, length of dress and style of shoe, unless specifically covered in the contest regulations, are not to be considered by the judges except where safety is considered.
 10. In no instance are judges or contest chairs authorized to change the contest rules. If an interpretation is required, the chair should contact the SkillsUSA Championships director.
 11. Judges are to evaluate all items related to safety. Contestants not meeting safety requirements in clothing and/or devices may be disqualified from competition if, in the judges' opinions, the safety of the contestants or those around them is endangered.
 12. Judges should rate contestants on the basis of entry-level job skills.
 13. Judges should rate each contestant independently and not compare rating sheets with those of other judges.
 14. In contests where there are five or fewer contestants, judges should rate participants against a standard of performance rather than automatically awarding first-, second- and third-place awards. In other words, it is not necessary to select a third-place or second-place winner if the judges feel the standard of performance is not high enough.
 15. After the judging is completed, judges should total their own rating sheets and return them, along with any notes and other pertinent information, to the SkillsUSA Championships technical committee chair.
 16. The judges and technical committee members will keep all results confidential until the general announcement of winners is made at the awards ceremony. **Under no circumstances may the judges discuss contest results or contestants' performance with contestants, chapter advisors or any observers.**
 17. Judges should refer all contest inquiries or problems that arise to the SkillsUSA Championships technical committee chair.

Instructions to Contest Judges

1. Judges must be completely familiar with the SkillsUSA Championships Technical Standards, particularly the General Regulations, Instructions to technical committee chairs, and the specific rules of the contest they have been asked to judge.
2. Judges should receive copies of the contest project and judges' rating sheet(s), along with complete instructions from the technical committee chair prior to the competition.
3. Members of the SkillsUSA Championships technical committee may not serve as judges unless approved by the SkillsUSA Championships director.
4. Judges must give careful attention to each rule, and each contestant or entry must be judged in exactly the same manner and under the same conditions as every other contestant or entry.
5. Judges will meet prior to the SkillsUSA Championships, at a time and place announced by the SkillsUSA Championships technical committee chair, to confer on:
 - a. Rule meanings and interpretations
 - b. Room arrangements

WORLD SKILLS COMPETITION

Introduction

SkillsUSA is a member of WorldSkills—The International Vocational Training Organization headquartered in Amsterdam, Netherlands. The WorldSkills organization sponsors the biennial WorldSkills Competition (WSC).

TeamUSA's participation in the WSC has provided a vehicle for comparing our career and technical students and methods of training with that of our major free-market competitors. The training technologies displayed at the WSC exemplify the ultimate standard in skilled work force preparation. As such, they offer important lessons for technical instructors and for SkillsUSA's corporate partners, whose productivity depends on employees with up-to-date skills. WSC results are one of the benchmarks by which a country's global economic competitiveness is judged.

WorldSkills was founded in 1950 and currently has members from 38 countries, with efforts constantly being made to expand the membership. In 1973, President Richard M. Nixon recognized SkillsUSA (then known as VICA) as the official organization representing the United States. Only one organization may represent a country in the official delegation and certify that country's international contestants.

SkillsUSA appoints one official delegate and one technical delegate to the governing body of WorldSkills, called the Member Assembly. A technical expert from the United States is appointed to each contest in which the United States competes and is responsible for working with technical experts from other countries to organize, conduct and judge that contest.

Team Selection Procedures and Criteria

1. SkillsUSA will only compete in those WSC contests for which it has a well-qualified competitor, a well-qualified technical expert, adequate industry support for conducting qualifying trials, advanced training and general operating costs of the TeamUSA contestant prior to the WSC.
2. SkillsUSA's Youth Development Foundation is responsible for obtaining financial support for TeamUSA's general operating costs, financial and in-kind support for qualifying trials and advanced training of TeamUSA members.
3. The age limit set by the WorldSkills for contestants is 22 years old during the calendar year of the competition.
4. Because the WSC is a biennial competition, students from two SkillsUSA Championships are considered. The number of competitors and selection procedure is determined by the technical experts and industry sponsors.
5. High school and college/postsecondary contestants may be invited to attend qualifying trials if they received the highest scores in relevant skills tests at previous SkillsUSA Championships and meet the age requirement. If these contestants are unable to attend, the next most qualified contestants are invited. Because invitation to the trials is based on scoring in selected skills to be tested at the WSC, SkillsUSA Championships medal winners are not guaranteed an invitation to qualifying trials.
6. Invitations to compete at qualifying trials will be sent to eligible SkillsUSA Championships competitors who are selected by the national organization, and their instructors and state directors will be notified.
7. Contestants are judged not only against other competitors in qualifying trials, but also against international performance standards. Therefore, being the top performer at the qualifying trials does not always guarantee selection for TeamUSA.
8. Advanced training may require contestants to temporarily relocate. Contestants will not be expected to pay for their training or to relocate without adequate financial support.
9. In addition to attending qualifying trials and advanced training, TeamUSA members are required to attend a two- to three-day orientation session prior to departure for the WSC.

SkillsUSA Championships

Technical Standards

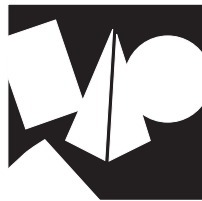
2005–2007

Leadership Development Contests



Action Skills
American Spirit
Chapter Business Procedure
Chapter Display
Community Service
Extemporaneous Speaking
Job Interview
Job Skill Demonstration A
Job Skill Demonstration B
Occupational Health and Safety
Opening and Closing Ceremonies
Outstanding Chapter
Prepared Speech
Promotional Bulletin Board
Quiz Bowl

ACTION SKILLS



Purpose

To evaluate each contestant's ability to demonstrate and explain an entry-level skill used in the occupational area for which he or she is training.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in career and technical programs with entry-level job skills as the occupational objective. A letter from the appropriate school official on school letterhead stating that the contestant is classified under the provisions of Public Law 105-17, Individuals with Disabilities Education Act, 1997 is required for participation. State associations having restrictions on the release of this information may submit a letter on school letterhead of eligibility which simply states: "I certify that (student name) meets the eligibility requirements for the SkillsUSA Championships Action Skills contest. Signed, (school official)." The eligibility letter is to be presented to the contest chair at the contestant orientation meeting.

Equipment and Materials

1. Supplied by the technical committee (committee includes The Dollhouse Centre and New York City United Federation of Teachers):
 - a. Timekeeper
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. All materials and equipment needed for the demonstration to be completed two times, once for the preliminaries and again for the finals, if required.

Scope of Contest

1. Contestants should prepare for the action skill demonstration by developing the following abilities:
 - a. Prepare a five- to seven-minute demonstration using props and models to illustrate points
 - b. Understand and practice elements of informal conversation
 - c. Demonstrate an effective and pleasing delivery style
 - d. If feasible, pronounce words understandably
 - e. Demonstrate good platform deportment and personal confidence
 - f. Organize demonstration in a logical and coherent manner
 - g. Effectively vary voice in pitch, tone, tempo and volume
 - h. Demonstrate good grooming in dress and personal hygiene
2. The demonstration is a presentation of an occupational skill accompanied by a clear explanation of the topic through the use of examples, experiments, displays or practical operations.
3. Any skill may be demonstrated if it is related to the occupational program of the contestant.
4. The contestant will present a 3"x5" card indicating the topic and purpose of the demonstration, as well as the contestant's training program, to the technical committee chair at the beginning of the contest.
5. The demonstration shall be at least five minutes in length, but shall not exceed seven minutes. Penalty: Five points will be deducted for each 30 seconds (or fraction thereof) under five minutes or for each 30 seconds (or fraction thereof) over seven minutes.
6. Time limit: Time will be started when the demonstration begins. The timekeeper will signal the speaker at five minutes, six minutes and seven minutes.
7. Contestants will be allowed three minutes to set up the demonstration and three minutes to clear the demonstration room. Penalty: Five points will be deducted for each 30 seconds (or fraction thereof) over the three-minute allowance.
8. An 8'x12' space with one 110-volt (15 amp) electrical outlet and one 30"x96" table will be provided.
9. Any visual aids (signs, charts, transparencies, slides or diagrams) are to be prepared by contestants. Professionally prepared visual materials are not permitted. No sound devices of any kind may be used to transmit audible words. No compressed air or gas will be permitted. No material or apparatus that in any way poses a threat of fire or explosion may be used. No

pressurized aerosol cans of any kind are permitted.

10. The contestant will not mention his or her name, school, city or state.
11. The demonstration is an individual performance; however, an assistant may be used to set up and dismantle the demonstration or may be used as a prop or model, but in no way can assist with the presentation. Any presentation assistance, coaching or signaling will disqualify the contestant. An advisor may not serve as an assistant. The presentation assistant/model/helper must be a SkillsUSA student member.
12. The contestant's advisor/instructor must attend the mandatory orientation meeting with the contestant.
13. Contestants will *not* take the skills-related written or Professional Development Test as outlined in the general regulations.
14. The presentation assistant/model/helper must attend the contestant orientation meeting.

**SKILLSUSA CHAMPIONSHIPS
ACTION SKILLS RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Introduction clearly identifies scope of demonstration	10								
Demonstration is organized in a logical sequence	20								
Explanation is complete to adequately cover the skill demonstrated	35								
Closing is appropriate	10								
Demonstration is interesting and informative	25								
SUBTOTAL	100								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
SAFETY PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

AMERICAN SPIRIT



Purpose

To evaluate local chapter activities for community service, citizenship projects and those with patriotic overtones that demonstrate a belief in the American way of life.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also place your order online at the following address: www.mtmrecognition.com/skillsusa/.

How to Enter the American Spirit Competition

1. **Eligibility:** Any chapter with an active charter is eligible to submit an entry. There will be no distinction between high school or college/postsecondary divisions. Each state may submit only one entry. States will establish their own deadlines for entries. A letter from the state association director designating the chapter as the state's official entry must accompany the entry.
2. **Deadline:** The entry will be brought to the National Leadership and Skills Conference and submitted to SkillsUSA Championships Headquarters no later than 3 p.m. on the Tuesday immediately prior to the SkillsUSA Championships. Registration forms must be submitted with the entries at that time.
3. **Exhibit of Entries:** Entries will be displayed in a secure area following the judging. Observers will be allowed to view them at designated times during the conference.
4. **Pick up of Entries:** Entries will be picked up the last day of the National Leadership and Skills Conference by the state association director or by the advisor upon the presentation of a letter of

authorization from the state association director. They will not be released to an unauthorized person. Chapters will be charged \$10 for the return of their entries following the national conference.

5. **Procedure:** Chapters must conduct three separate projects that demonstrate community service, patriotism and citizenship, and promotion of career and technical education. Only one project per category may be entered. All projects must be planned, organized and carried out by students, and the entry must be prepared by students.
6. **Documentation:** Entries must be typed and submitted in an official three-ring SkillsUSA notebook or scrapbook. The notebook will contain no more than 75 sheets of paper the size of the official SkillsUSA scrapbook paper. Both surfaces of the 75 sheets may be filled, for a maximum of 150 surfaces. Penalty: Five points per surface (10 points per sheet of paper) will be deducted for exceeding these maximums. Note: A surface is only that material which can be pasted or glued to the basic scrapbook paper. Any pockets, fold-out pages, multiple pages or similar features will count as additional surfaces and will be subject to penalty, except where specifically stated otherwise. Pages may be plasticized without affecting the scores. Documentation must include the following, presented in the order given here:

Title Page

Include name of chapter, name of president, school name, school address and school telephone number.

Section I: Community Service

- 1-A. A project description
- 1-B. List of objectives for the project
- 1-C. Evidence of planning for the project
- 1-D. Methods of implementation
- 1-E. Number of members involved in the activity
- 1-F. Letters of recommendation or recognition
- 1-G. Photographs

Section II: Patriotism and Citizenship

- 2-A. A project description
- 2-B. List of objectives for the project
- 2-C. Evidence of planning
- 2-D. Methods of implementation
- 2-E. Number of members involved in the activity
- 2-F. Letters of recommendation or recognition
- 2-G. Photographs

Section III: Promotion of Career and Technical Education

- 3-A. A project description
- 3-B. List of objectives for the project
- 3-C. Evidence of planning for the project
- 3-D. Methods of implementation
- 3-E. Number of members involved in the activity

- 3-F. Letters of recommendation or recognition
- 3-G. Photographs

Letters of Recommendation

Must include:

1. Letter from a school administrator
2. Letter from a business or industry representative
3. Letter from local newspaper or radio station verifying that articles have been submitted and/or published to publicize the activity conducted by the SkillsUSA chapter

Photographs

At least three good photographs of each project must be submitted to show events as they were conducted. Photos should be affixed in the notebook and identified.

Interview

An interview will be set up with one student designated by the advisor. Students will have an opportunity to explain how they approached various activities and how the project benefited their class. The interview will be used to help verify points awarded by the judges and to answer any questions they may have.

**SKILLSUSA CHAMPIONSHIPS
AMERICAN SPIRIT RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	TEAM NUMBER							
Title Page	4								
SUBTOTAL	4								
COMMUNITY SERVICE									
1. Description of project	5								
2. Objectives of project	5								
3. Evidence of planning	5								
4. Methods of implementation	5								
5. Number of members involved	5								
Letters of recommendation	3								
Photographs	4								
SUBTOTAL	32								
PATRIOTISM AND CITIZENSHIP									
1. Description of project	5								
2. Objectives of project	5								
3. Evidence of planning	5								
4. Methods of implementation	5								
5. Number of members involved	5								
Letters of recommendation	3								
Photographs	4								
SUBTOTAL	32								

continued

**SKILLSUSA CHAMPIONSHIPS
AMERICAN SPIRIT RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	TEAM NUMBER							
PROMOTION OF CAREER AND TECHNICAL EDUCATION									
1. Description of project	5								
2. Objectives of project	5								
3. Evidence of planning	5								
4. Methods of implementation	5								
5. Number of members involved	5								
Letters of recommendation	3								
Photographs	4								
SUBTOTAL	32								
INTERVIEW	50								
SUBTOTAL	50								
TOTAL	150								

CHAPTER BUSINESS PROCEDURE



Purpose

To evaluate a chapter's ability to conduct regular SkillsUSA business meetings according to the order of business published in these regulations and correct parliamentary procedure. The contest is based on the rules found in the latest edition of *Robert's Rules of Order, Newly Revised*.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc., by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members. The team need not be composed of officers, but team members must be organized under lone local charter. All team members must be members in the same division.

Observer Rule

Observers will be permitted in the college/postsecondary presentations on Wednesday of the competition. College/postsecondary teams must wait in a holding room. No observers will be permitted in the preliminary rounds of the high school competition. Observers will be permitted in the final presentations on the Thursday of competition. Contestants must wait in a holding room. Observers will be instructed not to talk or gesture or enter or exit the demonstration room while a team is competing.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Speaker's stand (lectern)
 - b. Gavel
 - c. Pad and pencil for secretary
 - d. One copy of *Robert's Rules of Order, Newly Revised* per demonstration room
 - e. Packet for each team, which will include:
 1. List of business items

2. Minutes of previous meetings
3. Treasurer's report
4. Paper for any committee report
5. One pencil
- f. Stopwatch
- g. Extra pencils as may be required
- h. All necessary information and furnishing for judges and technical
- i. Written multiple choice test on parliamentary procedure

Scope of the Contest

1. Team members will demonstrate their ability to perform the following:
 - a. Use critical thinking skills to discuss ideas, solve problems and reach agreement in an orderly and businesslike manner
 - b. Pronounce words in a clear and understandable manner
 - c. Vary voice in pitch, tone, tempo and volume
 - d. Demonstrate good grooming in dress and personal hygiene
2. Each team will consist of six registered members. The team may perform with five members without penalty in the event that a member fails to show up or was forced to withdraw within five days of the competition.
3. A team member will draw a number during the contest orientation meeting to determine the order of demonstration.
4. Preparation time: A list of business items to insert into the order of business, secretary's minutes of the previous meeting, the treasurer's report and paper for preparing any committee report or reports will be given to the president (presiding officer) as the team members leave the contest orientation. Any committee reports written, read and submitted will comply with the regulations set forth in *Robert's Rules of Order, Newly Revised*, and stipulated by the minutes of the previous meeting.
5. Demonstration: Each team will demonstrate, in a simulation of a regular SkillsUSA Business meeting, the procedures necessary to complete a business meeting from call to order to adjournment. Use only those portions of the following order of business which are required by the contest materials given to the team:

a. Order of Business

1. Call to order
 2. Reading and approval of minutes
 3. Reports of officers, boards and standing committees
 4. Reports of special committees (select or ad hoc)
 5. Special orders
 6. Unfinished business and general orders
 7. New business
- Note: Because of time constraints, the official SkillsUSA Opening and Closing

Ceremony will not be demonstrated as part of this demonstration.

6. The simulated business meeting will be dictated by the above order of business published in these rules, and materials given to the teams by the technical committee. The demonstration will include no fewer than six motions which will include at least one motion of each of the following types:
 - a. Privileged motion
 - b. Subsidiary motion
 - c. Main motion
 - d. Incidental motion
 - e. Motions that bring a question again before the assembly
7. A pad and pencil will be provided on the secretary's desk in the demonstration room for recording the minutes of the simulated business meeting. One unmarked copy of *Robert's Rules of Order, Newly Revised*, will be in the demonstration room for the team's reference.
8. Each team will properly handle all items as stipulated by the minutes of the previous meeting, a treasurer's report and the list of business items to incorporate into the order of business published in these regulations. A 30-point penalty will be charged for each item of business not covered by the demonstration or for each item of business added.
9. Only the secretary's minutes of the previous meeting, treasurer's report, list of business items and any committee report may be used during the demonstration. The president (presiding officer) may make notes on the list of business items. A team will be disqualified if any member uses notes during the business meeting demonstration.
10. Time limit: The demonstration should be at least 10 minutes in length but should not exceed 15 minutes. Penalty: Five points will be deducted for each 30 seconds or fraction thereof under 10 minutes or for each 30 seconds or fraction thereof over 15 minutes. Time required to complete the recording and reading of the secretary's minutes at the end of the demonstration is not included in the time limits.
11. Following adjournment of the simulated business meeting, the secretary will read the minutes covering the demonstration to the judges. The minutes will be judged for completeness as read. Penmanship or sentence structure will not be judged, since time will not permit corrections to the hurriedly made record.
12. All materials given to team members as they leave the contest orientation room, along with the minutes of the demonstration (in their rough form) any committee report and contestant name badges, will be given to a contest official in the demonstration room after the team has completed its demonstration.
13. Throughout the demonstration, team members will be referred to by first name only. No reference will

be made to their school name, city or state. A 5-point penalty will be assessed if a school name, last name of contestant, city or state is identified.

Tiebreakers:

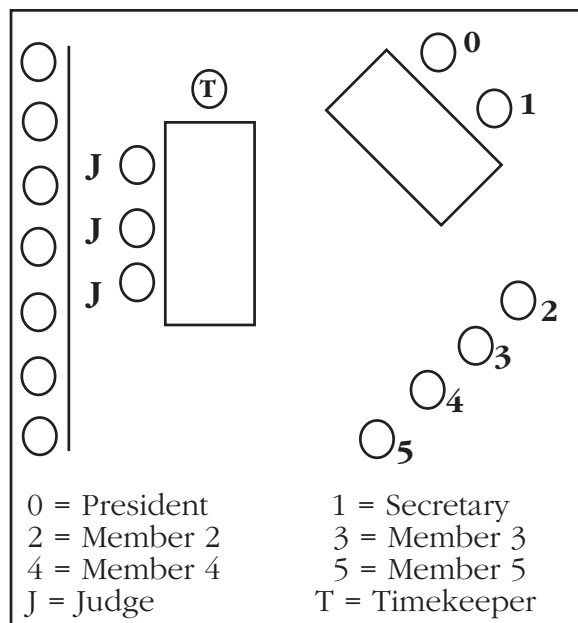
Tiebreakers for teams will be: (1) total presentation score, (2) the team's average written test score, and (3) the total score for questions.

Seating Arrangements:

The chair and secretary shall be seated at the head table, with the other team members seated in four chairs staggered in front of the table. (See diagram.)

Arrangement of Rooms

Demonstration room — This room will be furnished with seats for judges and observers with a demonstration area at the front. The demonstration area will be set up with four chairs for team members and a table, from which the president will conduct the meeting and the secretary will take minutes. A table and three chairs will be provided for the judges and contest officials. The timekeeper will be seated beside the judges table so as to be in clear view of participants.



Special Instructions to the Technical Committee

All judges must have a thorough knowledge of parliamentary procedure. A registered parliamentarian should be available for each group of judges.

Judging Criteria

1. All team members will be required to take a written test covering basic parliamentary procedure. Total test scores for each team will be averaged.
2. The written test will be used to determine those teams participating in the finals, but will not be used to determine the medal winners.

SKILLSUSA CHAMPIONSHIPS
CHAPTER BUSINESS PROCEDURE RATING SHEET

ITEMS EVALUATED	POSSIBLE POINTS	TEAM NUMBER						
President's ability to conduct a meeting; voice; poise; grammar; expression; responsiveness; confidence; control of meeting;	20							
Secretary's reading of minutes of previous meeting	5							
Approval of minutes of previous meeting	5							
BUSINESS SESSION								
1. Treasurer's Report	5							
2. Committee Report	10							
3. Total group involvement in presentation and discussion of business items	20							
4. General organization of business meeting	10							
5. Following of the order of business for contest	10							
6. Quality of general discussion	10							
7. Ease with which business is conducted	5							
8. Ability to follow proper parliamentary procedure in:								
a. Obtaining the floor	5							
b. Handling privileged motions	10							
c. Handling incidental motions	10							
d. Handling subsidiary motions	10							
e. Handling main motions	10							
f. Handling motions that bring a question again before the assembly	10							
Secretary's reading of minutes of demonstration: accuracy in writing, reading and submitting	10							
General team appearance	10							
Written Test	25							
SUBTOTAL	200							
CLOTHING PENALTY (minus 0 to 5 percent of total points)								
BUSINESS ITEMS PENALTY (minus 30 points for each business item not covered by the demonstration or for each item added.)								
TIME PENALTY (minus 5 points for each 30 seconds or fraction thereof under 10 minutes or over 15 minutes)								
IDENTIFICATION PENALTY (minus 5 points for each reference)								
TOTAL								
Team Ranking								

CHAPTER DISPLAY



Purpose

To select the outstanding promotional display designed and constructed by SkillsUSA members. Students are encouraged to construct displays that are portable and inexpensively shipped so they may be widely used.

First, refer to General Regulations, Page 9.

Clothing Requirement (Interview)

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Two displays from each state association may be entered in the contest: one in high school and one in college/postsecondary competition.

Observer Rule

Observers will not be present during the actual judging. Displays may be viewed on the day of the SkillsUSA Championships.

Scope of the Contest

1. The display must carry out the theme established by the national organization and announced by Sept. 1 for the following school year. To verify theme, consult the SkillsUSA Web site at www.skillsusa.org.
2. The display must be designed and constructed by students who were enrolled during the school year immediately preceding the National Leadership and Skills Conference.
3. Maximum size of the display will be 4' wide by 4' deep by 7' high (measured from the floor and a parallel line running in front of displays). All moving parts must remain inside these dimensions. Minimum size of the displays will be 32" wide by 42" deep by 42" high (measured from the table top with the table parallel to the front of the display layout line). Penalty: Five points will be de-

ducted for each 1/8" over the prescribed size for any dimension or for each 1/8" under the prescribed size for any dimension. If foldout portions are used in the display, they must be arranged to comply with the maximum size of the display.

4. One student in official SkillsUSA attire shall be prepared to participate in a presentation/interview component in which the student will describe the display and relate how it conforms to the theme. The presenter/interviewee should include an explanation of the process the chapter followed to determine the scope of the display, how the design was determined, how the display was constructed, what different occupational programs were represented by team members, how many hours were consumed in constructing the display, what parts of the display were commercially made, and how the display was designed to allow for easy setup. The presentation/interview will be five to seven minutes in length. The presenter/interviewee must bring a 1" official SkillsUSA three-ring binder containing pictures, design sketches and drawings, and a brief description of the purpose in relation to the theme, education value, development and construction of the display which can be used as a visual aid in helping the presenter/interviewee inform the judges about the display. Verification: A letter, signed by the local school administrator certifying that the display was designed and constructed by students, must be included as the first page of the notebook. The notebook must be limited to 10 pages (20 surfaces). The notebook should be brought to the display by the presenter/interviewee, used to support the presentation of the display to judges, and left at the display following the interview for further review by the judges.
5. The display may use references to state, city or school without penalty.
6. If displays use electronic equipment, surge protectors should be installed. The SkillsUSA national headquarters cannot be responsible for current surges. Consider using a power strip with circuit breaker for 110-volt power. Displays that have electrical/electronic components should be designed so that they can be activated and deactivated with one switch so that activation time will be reduced by the interview participant and left at the display following the interview for further review by the judges.
7. Immediately following the interviews, a debriefing will be conducted by the technical committee and judges to inform participants about the quality of the displays and the interviews.
8. On the day when the public is invited to visit the displays, every effort should be made by the display teams to take turns presenting their displays to interested visitors while assuring the safety of their displays.

Procedure for Shipment and Setup

1. Display contest entries may be shipped in advance to the national conference. Shipping instructions may be obtained from your state association director. Do not ship entries to the national association headquarters or to the convention center; such shipments will be refused. All costs incurred will be the responsibility of the local chapter or the state SkillsUSA association. All sides of the display shipment container should be clearly marked as a display and contain the name of the school and state from which it was sent. Displays should also be clearly marked with the shippers' information so it can be traced if lost at the conference. The students and their advisors should obtain specific information from the shipper and bring copies of this information with them to the setup area to be used to locate lost shipments.
2. The display must be set up and moved out according to the schedule outlined in the National Leadership and Skills Conference program.

Note: SkillsUSA will not be responsible for displays that have not been removed from the exhibit area by noon on the day following the SkillsUSA Championships contests. Failure to move out displays by this deadline could result in their damage or destruction by the cleanup crew.

3. Electrical service and one undraped table will be available for each display if needed. There will be no charge to the chapter for these items.
4. Only students will be allowed to set up the displays, and only three students will be issued passes into the contest setup area. Students must stay in the designated area. Failure to do so will result in the disqualification of the display.
5. Displays requiring electrical service must have a 20' three-prong extension cord available to reach electrical service.

**SKILLSUSA CHAMPIONSHIPS
CHAPTER DISPLAY RATING SHEET**

ITEMS EVALUATED	DISPLAY NUMBER							
	POSSIBLE POINTS							
Educational Information Value What does the display communicate to the observer?	20							
Notebook: 1. How many SkillsUSA chapters/ members involved?	6							
2. How was the work organized?	6							
3. How many hours?	6							
4. Write-up/pictures of construction	6							
5. Prints/drawings included	6							
Layout and Design 1. Balance—color use, shape, placement	10							
2. Eye flow—pleasing, illustrations	10							
Central theme carried out in a clear manner	10							
Creativity and Originality 1. Technical creativity	10							
2. Innovation	10							
3. Motivation	10							
Workmanship 1. Finish	5							
2. Lettering	5							
3. Fit	5							
4. Material selection	5							
Student Presentation/Interview Communication skills, knowledge, confidence	20							
SUBTOTAL	150							
Penalty for oversize/undersize								
Clothing Penalty (minus 0 to 5 percent of total points)								
TOTAL								

COMMUNITY SERVICE



Purpose

To evaluate local chapter activities that benefit the community and to recognize excellence and professionalism in the area of community service. This event also enables the community to become aware of the outstanding work being performed by career and technical education students.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members. Chapters receiving at least 400 points from state judges may be entered in national competition. There will be no designation of high school and college/postsecondary competition.

The entire chapter is encouraged to participate in the community service project. A team of two–three members will represent the chapter in a live presentation, and this team may be made up of a mixture of high school and college/postsecondary students, students from one class or from a combination of classes in an institution. All team members must be from the same school.

Equipment and Materials

a. Supplied by the technical committee:

1. Overhead projector and screen
2. Easel for flip chart
3. 110 volt outlet
4. Timer
5. Time cards
6. All necessary information and furnishings for judges and technical committee

b. Supplied by the contestant:

1. Laptop computer, LCD projector or other visual equipment as necessary for the presentation
2. Note cards, if desired

Scope of the Contest

The chapter will organize the year's activity in community service and present its best community service project to a panel of judges. One project will be presented. Notebooks containing information about more than one project will not be judged.

The contest will consist of two parts: a notebook outlining the chapter community service project and a live presentation by the chapter team.

Notebook

A chapter notebook must be compiled that describes the chapter community service project. The notebook must be an official SkillsUSA three-ring binder. The notebook must not contain more than 30 pages (60 surfaces). The notebook should be organized in the following format:

Title Page — The title page should include the name of the project and the chapter name.

Table of Contents

Section I — Objectives of the project

What did the chapter set out to accomplish?

Section II — Community Impact

How many people were reached by the project?

What positive results were achieved?

How did the project make a difference?

Section III — Impact on the school

What difference did community involvement make for students and the SkillsUSA chapter?

Section IV — Letters of recognition

A maximum of five letters can be included

Section V — Publicity

Newspaper articles, photos or other items that show publicity received during the project.

Live Team Presentation

A team of 2–3 will represent the chapter in a live professional presentation. The purpose of the presentation is to provide the judges with an overview of the chapter's community service project and the positive results achieved. **All** team members must take an active part in the presentation.

The presentation shall be 7–10 minutes in length.

Time penalty: Five points will be deducted for each 30 seconds or fraction thereof under seven minutes or

over 10 minutes. Time will be started when the presentation begins. The timer will signal the team at seven minutes and at nine minutes.

Teams are encouraged to be creative in their presentations. The use of computer-generated presentations or other visuals is strongly encouraged.

All charts and graphs must be student produced. No commercially produced materials will be allowed. Each team must use **at least one** of the following visual formats in their presentation:

- Flip charts
- Overhead transparencies
- 35mm slide presentation
- PowerPoint or other computer presentation

Note: Each team must supply the computer and projector for computer-generated presentations.

Judging

This contest will be judged to the following standard:

All teams attaining 92-100 percent of the total possible points (at least 460 points) will be recognized at the **Gold** level.

All teams attaining 85–91 percent of the total possible points (at least 425 points) will be recognized at the **Silver** level.

All teams attaining 75–84 percent of the total possible points (at least 375 points) will be recognized at the **Bronze** level.

**SKILLSUSA CHAMPIONSHIPS
COMMUNITY SERVICE RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
NOTEBOOK									
Title page	5								
Table of contents	5								
I. Objectives of the project	30								
II. Community impact	50								
III. Impact on the school	40								
IV. Letters of recognition	30								
V. Publicity	40								
LIVE PRESENTATION									
Opening/Introduction	40								
Team Appearance	20								
Organization									
Sequence of planning and implementation of project	50								
Objectives									
Purpose of project	50								
Explanation of project									
Community impact	50								
School impact	50								
Closing	40								
SUBTOTAL	500								
Written Test									
Time Penalty (minus 5 points for each 30 seconds under 7 minutes or over 10 minutes)									
Clothing Penalty (minus 0 to 5 percent of total points)									
TOTAL POINTS									

EXTEMPORANEOUS SPEAKING



Purpose

To evaluate each contestant's ability to give a speech on an assigned topic with a minimum of advance preparation.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, wind-breaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members.

Observer Rule

Observers will be allowed to hear the speeches in the presentation room provided space is available. No talking or gesturing will be permitted. No observers will be allowed in the assembly or preparation room. No one will be permitted to enter or leave the presentation while a contestant is speaking.

Note: No photography devices will be allowed in the contest room.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Reference materials: *SkillsUSA Leadership Handbook*, *Webster's New Collegiate Dictionary*, *Bartlett's Familiar Quotations* and *Roget's Thesaurus*
 - b. Blank 3"x 5" cards
 - c. Copies of selected speech topic in sealed envelopes
 - d. Stopwatches as required
 - e. Time cards
 - f. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Pencil or pen

Scope of the Contest

1. Contestants should prepare for extemporaneous speaking by developing these competencies:

- a. Demonstrate good grooming in dress and personal hygiene
 - b. Understand and practice elements of informal conversation
 - c. Prepare a three- to five-minute speech or answer to a question with no more than five minutes preparation
 - d. Demonstrate effective, pleasing delivery style
 - e. Effectively use illustrations and examples
 - f. Pronounce words in a clear, understandable manner
 - g. Demonstrate good platform deportment and personal confidence
 - h. Organize speech material in a logical and coherent manner
 - i. Effectively vary voice in pitch, tone, tempo and volume
2. Contestants will draw numbers during the precontest orientation meeting to determine the order of competition.
 3. The technical committee will select a speech topic based upon material in the *SkillsUSA Leadership Handbook*. All contestants will be assigned the same topic. Committee membership includes: American Technical Publishers Inc., Beacham & Associates, Sprint Corp., St. Louis Carpenters Joint Apprenticeship Committee and UMB Investment Advisors.
 4. Contestants will enter the preparation room one at a time, where they will be given a speech topic. Contestants will have five minutes to determine the content and organize their speeches.
 5. During preparation time, contestants may consult reference materials supplied in the preparation room and may make notes on 3" x 5" cards for use during the speech. Contestants may not take any outlines, notes or reference materials into the presentation room.
 6. The speech shall be at least three minutes in length but shall not exceed five minutes. Penalty: Five points will be deducted for each 30 seconds or fraction thereof under three minutes or for each 30 seconds or fraction thereof over five minutes.
 7. Time limit: Time will be started when the speech begins. The timekeeper will signal the speaker at three minutes, four minutes and five minutes. Contestants will be permitted to use a watch or clock.
 8. Contestants will not mention their name, school, city or state. A five-point penalty will be assessed for each occurrence.

Arrangement of Rooms

1. Assembly room — Area where contestants wait their turns to enter preparation room will be provided.
2. Preparation room — A room furnished with a table or desk and chair will be provided for the five-minute preparation time. All necessary reference materials and blank 3"x 5" cards will be available in this room.
3. Speech presentation room — This room will be furnished with a speaker's stand (lectern) facing the audience and judges.

**SKILLSUSA CHAMPIONSHIPS
EXTEMPORANEOUS SPEAKING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Opening (appearance, introduction)	15								
Voice (pitch, tempo, volume, enthusiasm)	10								
Platform Deportment (gestures, poise, eye-contact, mannerisms)	10								
Organization (logic, clarity, suitability, coherence)	20								
Mechanics (diction, grammar, pronunciation, word picture)	10								
Closing (summary, conclusion)	15								
Effectiveness (assigned topic covered)	20								
SUBTOTAL	100								
TIME PENALTY (5 points minimum)									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
OTHER PENALTIES									
TOTAL									

JOB INTERVIEW



Purpose

To evaluate contestant's understanding of employment procedures they will face in applying for positions in the occupational areas for which they are training.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members.

Observer Rule

No observers will be permitted to view the contest.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Employment application forms
 - b. Timer
 - c. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Three copies of a **one-page** typewritten personal résumé. No other material may be submitted by the contestant.
 - b. Pen for completing application form

Scope of the Contest

1. Contestants should prepare for the job interview contest by developing the following abilities:
 - a. Answer questions and carry on a casual conversation
 - b. Demonstrate a confident handshake, proper greeting and personal introduction
 - c. Prepare a personal résumé and job application

- d. Know the aspects of making positive first impressions
 - e. Develop listening skills and show sincere interest
 - f. Demonstrate good grooming in dress and personal hygiene
 - g. Demonstrate confidence and positive personal image
 - h. Pronounce words in a clear and understandable manner
 - i. Know their personal qualities and how to "sell themselves" to a prospective employer
 - j. Effectively vary voice in pitch, tone, tempo and volume
2. The contest will be divided into three phases:
 - a. The receptionist's preliminary evaluation
 - b. Completion of employment application
 - c. An in-depth interview
 3. Contestants shall apply for positions in keeping with their vocational objectives. In completing the personal résumé and employment application, contestants will use their own name, address, school, employment and occupational information. All information must be as accurate as possible.
 4. The receptionist will serve as a judge.
 5. When called from the assembly area, the contestant will approach the receptionist as though applying for a job in the occupational area consistent with the contestant's training program. Contestants will be given an employment application to complete within 30 minutes in the receptionist's presence.
 6. Contestants will complete the application by printing in ink. The receptionist will note the time the contestant is handed the application and the time the completed application is returned. One point will be deducted for each minute or fraction thereof over the 30-minute time limit (maximum deduction of 10 points). Information such as the following may be asked on the application:
 - a. Employment desired
 - b. Education
 - c. Membership in civic, community or school organizations
 - d. Former employers and work experience
 - e. References
 7. The receptionist will receive the completed application along with three copies of a **one-page**, typewritten résumé prepared in advance and supplied by the contestants. The following information **must** be contained in the one-page résumé:
 - a. Name, address and phone number
 - b. Career objective
 - c. Education and training
 - d. Work experience beginning with present employment listing specific responsibilities

- e. Memberships, major accomplishments, awards earned
 - f. References upon request
8. After the receptionist evaluates the application, a technical committee member will present three copies of the personal résumé to the interviewing committee (judges).
 9. After the judges review the personal résumé, a technical committee member will direct the contestant to the judges for the interview.
 10. The interview with the judges will be approximately 10 minutes. This will allow adequate time for four to six questions.
 11. All contestants will be asked identical questions. Such questions might include the following but will be determined by the judges:
 - a. What are your occupational objectives?
 - b. What do you like most about this occupation?
 - c. What are your hobbies?
 - d. What would you like to be doing five years from now? Ten years?
 - e. Why do you want to work for our company?
 - f. What two accomplishments have given you the most satisfaction?
 - g. What are your extracurricular activities?
 - h. How would you describe your ideal job?
 - i. What do you think determines a person's progress within a company?
 - j. What do you consider to be your outstanding job-related personal characteristics or strengths?
 - k. What qualifications and characteristics do you have that make you feel you'll succeed in your work?
 12. Judges are encouraged to use their own interview techniques and should keep the focus of the interview on the selected questions.

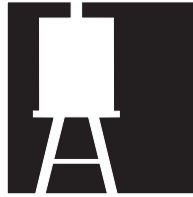
Arrangement of Rooms

1. Holding room—An area will be set up in which contestants will assemble to wait their turns.
2. Receptionist's area—An area will be furnished with receptionist's desk and necessary tables and chairs at which contestants will complete their employment applications.
3. Interview room—A room will be furnished with table and chairs for the contestant and interviewing committee of three judges.

**SKILLSUSA CHAMPIONSHIPS
JOB INTERVIEW RATING SHEET**

ITEMS EVALUATED BY RECEPTIONIST	POSSIBLE POINTS	CONTESTANT NUMBER							
Greeting and introduction	10								
Appearance/posture/grooming	10								
Completeness and legibility of application form	50								
ITEMS EVALUATED BY INTERVIEWER									
Greeting and introduction	10								
Appearance/posture/grooming	10								
Completeness and clarity of résumé	20								
Maturity: Answers to questions	25								
Presentation: Self-confidence and persuasiveness	25								
Preparation: knowledge of position applied for and personal history	25								
Personal salesmanship	25								
SUBTOTAL	210								
Application time penalty (minus 0 to 10 pts)									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

JOB SKILL DEMONSTRATION A



Purpose

To evaluate each contestant's ability to demonstrate and explain an entry-level skill used in the occupational area for which he or she is training.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in career and technical programs with career objectives that are included in the annual SkillsUSA Championships. The "A" classification is based on the vocational enrollment and career objective of the contestant. It is not based on the specific skills to be demonstrated.

Contests from the current SkillsUSA Championships that may be demonstrated are (in alphabetical order):

Basic Health Care Skills, Dental Assisting, Health Occupations Professional Portfolio, Medical Assisting, Nurse Assisting, Practical Nursing, Customer Service, First Aid/CPR, 3-D Visualization and Animation, Advertising Design, Architectural Drafting, Automated Manufacturing Technology, Automotive Service Technology, Aviation Maintenance Technology, Building Maintenance, Cabinetmaking, Carpentry, Collision Repair Technology, Commercial Baking, Computer Maintenance Technology, Cosmetology, CNC Milling, Criminal Justice, Culinary Arts, Diesel Equipment Technology, Electronics Applications, Electronics Technology, Food and Beverage Service, Graphic Communications, HVACR, Industrial Motor Control, Internetworking, Major Appliance Technology, Marine Service Technology, Masonry, Mechatronics, Motorcycle Service Technology, Nail Care, Photography, Plumbing, Power Equipment Technology, Precision Machining Technology, Preschool

Teaching Assistant, Residential Wiring, Robotics and Automation Technology, Sheet Metal, TeamWorks, Technical Computer Applications, Technical Drafting, Television (Video) Production, and Welding

Equipment and Materials

1. Supplied by the technical committee:
 - a. Timekeeper
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. All materials and equipment needed for the demonstration to be completed two times, once for the preliminaries and again for the finals, if required.

Scope of the Contest

1. Contestants should prepare for the job skill demonstration by developing the following abilities:
 - a. Prepare a five- to seven-minute demonstration
 - b. Practice elements of informal conversation
 - c. Demonstrate an effective and pleasing delivery style
 - d. Pronounce words in a clear and understandable manner
 - e. Demonstrate good platform deportment and personal confidence
 - f. Organize demonstration in a logical and coherent manner
 - g. Effectively vary voice in pitch, tone, tempo and volume
 - h. Demonstrate good grooming in dress and personal hygiene
2. The demonstration is a performance of an occupational skill accompanied by a clear explanation of the topic through the use of experiments, displays or practical operations. **An actual skill must be performed as opposed to an illustrated talk.** Note cards and other reference materials are not permitted.
3. Any skill may be demonstrated, provided it is a skill related to the occupational program of the contestant.
4. The demonstration shall be at least five minutes in length but shall not exceed seven minutes. Penalty: Five points will be deducted for each 30 seconds or fraction thereof under five minutes or for each 30 seconds or fraction thereof over seven minutes.
5. Time limit: Time will be started when the demonstration begins. The timekeeper will signal the speaker at five minutes, six minutes, and six minutes 30 seconds.

6. Contestants will be allowed three minutes to set up the demonstration and three minutes to clear the demonstration room. Penalty: Five points will be deducted for each 30 seconds or fraction thereof over the three minute allowance.
7. A performance space of 8'x12' will be provided that contains a 30"x96" table and one duplex (two plug ins) 110-volt (15 amp) electrical outlet.
8. Any visual or auditory aids (signs, charts, transparencies, slides, diagrams, tapes, CDs) are to be prepared by contestants. Professionally prepared visuals and audio materials may not be used. No pressurized aerosol cans of any kind will be permitted, and no compressed air, gas or flammable liquid may be used.
9. The contestant will not mention his or her name, school, city or state.
10. The demonstration is an individual performance; however, assistants may be used to set up and dismantle the demonstration. Models or assistants may be used in the demonstration but will not say or do anything that assists the demonstration other than serve as a model as needed for a facial, clothing design demonstration, etc.
11. Basic safety practices related to the skill performed must be followed. Safety violations will be subject to penalties of one to 10 points. Judges may stop the demonstration for serious violations.

**SKILLSUSA CHAMPIONSHIPS
JOB SKILL DEMONSTRATION A RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
OPENING Clearly identifies scope of demonstration	15								
VOICE Pitch, tempo, volume, diction, enthusiasm	10								
PLATFORM DEPORTMENT Gestures, poise, use of visual aids, mannerisms	10								
ORGANIZATION Logic, clarity, suitability, coherence	15								
SKILL Skill level, technique, appropriateness	15								
EFFECTIVENESS Covers topic, informative, interesting	20								
CLOSING Summary, conclusion	15								
SUBTOTAL	100								
TIME PENALTY (minus 5 points for each fraction of 30 seconds under 5 minutes or for each fraction of 30 seconds over 7 minutes)									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
SAFETY PENALTY (minus 0 to 10 points)									
TOTAL									

JOB SKILL

DEMONSTRATION B



Purpose

To evaluate each contestant's ability to demonstrate and explain an entry-level skill.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in career and technical programs with career objectives that are not included in the annual SkillsUSA Championships. The "B" classification is based on the vocational enrollment and career objective of the contestant. It is not based on the specific skills to be demonstrated. Examples of programs not currently included as national contests: firefighting, floral design, landscaping, meat cutting, upholstery, tiling/floor covering, etc.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Timekeeper
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. All materials and equipment needed for the demonstration to be completed two times, once for the preliminaries and again for the finals, if required.

Scope of the Contest

1. Contestants should prepare for the job skill demonstration by developing the following abilities:
 - a. Prepare a five- to seven-minute demonstration
 - b. Practice elements of informal conversation
 - c. Demonstrate an effective and pleasing delivery style
 - d. Pronounce words in a clear and understandable manner

- e. Demonstrate good platform deportment and personal confidence
 - f. Organize demonstration in a logical and coherent manner
 - g. Effectively vary voice in pitch, tone, tempo and volume
 - h. Demonstrate good grooming in dress and personal hygiene
2. The demonstration is a performance of an occupational skill accompanied by a clear explanation of the topic through the use of experiments, displays or practical operations. **An actual skill must be performed as opposed to an illustrated talk.** Note cards and other reference materials are not permitted.
3. Any skill may be demonstrated, provided it is a skill related to the occupational program of the contestant.
4. The demonstration shall be at least five minutes in length, but shall not exceed seven minutes. Penalty: Five points will be deducted for each 30 seconds or fraction thereof under five minutes or for each 30 seconds or fraction thereof over seven minutes.
5. Time limit: Time will be started when the demonstration begins. The timekeeper will signal the speaker at five minutes, six minutes, and six minutes 30 seconds.
6. Contestants will be allowed three minutes to set up the demonstration and three minutes to clear the demonstration room. Penalty: Five points will be deducted for each 30 seconds or fraction thereof over the three minute allowance.
7. A performance space of 8'x12' will be provided that contains a 30"x96" table and one duplex (two plug ins) 110-volt (15 amp) electrical outlet.
8. Any visual or auditory aids (signs, charts, transparencies, slides, diagrams, tapes, CDs) are to be prepared by contestants. Professionally prepared visuals and audio materials may not be used. No pressurized aerosol cans of any kind will be permitted, and no compressed air, gas or flammable liquid may be used.
9. The contestant will not mention his or her name, school, city or state.
10. The demonstration is an individual performance; however, an assistant may be used to set up and dismantle the demonstration. Models or assistants may be used in the demonstration but will not say or do anything that assists the demonstration other than serve as a model as needed for a facial, clothing design demonstration, etc.
11. Basic safety practices related to the skill performed must be followed. Safety violations will be subject to penalties of one to 10 points. Judges may stop the demonstration for serious violations.

**SKILLSUSA CHAMPIONSHIPS
JOB SKILL DEMONSTRATION B RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
OPENING Clearly identifies scope of demonstration	15								
VOICE Pitch, tempo, volume, diction, enthusiasm	10								
PLATFORM DEPORTMENT Gestures, poise, use of visual aids, mannerism	10								
ORGANIZATION Logic, clarity, suitability, coherence	15								
SKILL Skill level, technique, appropriateness	15								
EFFECTIVENESS Covers topic, informative, interesting	20								
CLOSING Summary, conclusion	15								
SUBTOTAL	100								
TIME PENALTY (minus 5 points for each fraction of 30 seconds under 5 minutes or for each fraction of 30 seconds over 7 minutes)									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
SAFETY PENALTY (minus 0 to 10 points)									
TOTAL									

OCCUPATIONAL HEALTH AND SAFETY



Purpose

To evaluate the chapter's activities in the promotion of good health and safety habits in the shop, laboratory and on the job.

First, refer to General Regulations, Page 9.

Clothing Requirement (Interview)

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

All state first-place winners may be entered in national competition. Each state may enter one high school single- and one multi-section entry and one college/postsecondary single- and one multi-section entry. The chapter(s) will organize a Health and Safety Committee with a chair and a secretary. The committee must involve at least five members.

Deadline

The safety entry will be brought to the National Leadership and Skills Conference (NLSC) and the SkillsUSA Championships, and submitted to the national Occupational Health and Safety Technical Committee no later than 4 p.m. on the Tuesday immediately prior to the SkillsUSA Championships. A card with the name of the state, school and interview student must be taped on the inside of the cover of the notebook.

Exhibit of Entries

Safety entries will be displayed in a secure area following the judging. Observers will be allowed to view them at designated times during the conference.

Pick-Up of Entries

Safety entries must be picked up by 4 p.m. or immediately after the debriefing meeting by the advisor or state association director, or upon the presentation of a letter of authorization from the appropriate state association director. They will not be released to an unauthorized person. Chapters will be charged \$10 for the return of entries following the national conference.

Scope of the Contest

The Contest Technical Committee membership includes the National Center for Construction Education and Research and the National Institute for Occupational Safety and Health.

1. The contest will consist of an evaluation of a chapter's safety activities as presented in the official SkillsUSA scrapbook.
2. Awards will be presented in two categories: single and multiple chapter. (Note: A school may enter both categories of competition. All activities documented in the entry must reflect only the efforts of the students and advisor(s) of those section(s). You may not take credit for school functions or projects conducted outside of SkillsUSA sponsorship.)
 - a. Single chapter refers to a SkillsUSA chapter which represents one occupational area regardless of the number of members. Multiple-teacher departments with the same vocational classification will be recognized as a single chapter. (For example, a three-teacher cosmetology department would be entered as a single chapter; an Auto Service Technology I and Auto Service Technology II program would be a single chapter.) All cooperative programs in a school will be considered one chapter.
 - b. Multiple chapter refers to an entry that represents more than one occupational program.
 - c. A single or multiple chapter must complete all categories in the contest.
3. The entry will:
 - a. Contain verification, proof or evidence of the activities represented. All articles and materials must be dated.
 - b. Be an official SkillsUSA scrapbook from the SkillsUSA Merchandise catalog.

Note: Different pages may be substituted for pages supplied in the official SkillsUSA scrapbook, or the pages may be covered; however, both front and back covers must be used without alteration. Ten points will be deducted for alteration. The single-chapter entry will contain no more than 50 sheets of paper the size of the official SkillsUSA scrapbook paper. Both surfaces of the 50 sheets may be filled for a maximum of 100 surfaces. The multiple-chapter entry will contain

no more than 75 sheets of paper the size of the official SkillsUSA scrapbook paper. Both surfaces of the 75 sheets may be filled for a maximum of 150 surfaces. Penalty: Five points per surface (10 points per sheet of paper) will be deducted for exceeding these maximums.

Note: A surface is only that material which can be pasted or glued to the basic scrapbook paper. Any pockets, fold-out pages, multiple pages or similar features will count as additional surfaces and will be subject to penalty, except where specifically stated otherwise. Pages may be plasticized without affecting the scores.

4. The contest will consist of four health and/or safety projects conducted by a special Health and Safety Committee. The projects may involve only one occupational training area or multiple occupational training areas. The projects will be presented in an official SkillsUSA scrapbook available from the SkillsUSA Supply Service. A 20 point deduction will result from the use of any other type of cover.
5. The Health and Safety Committee must document at least one regular meeting a month during the school year with minutes that show the progress of the projects.
6. The entry will verify all activities from the time the Health and Safety Committee first meets, until the projects are completed. A single project may cover an entire school year, or it may be a short-term project. All articles and materials must be dated. There must be proof or evidence of the activities represented. All projects must be conducted within SkillsUSA sponsorship.
7. Points will be awarded only for committee activities, which were accomplished during the year in which a chapter enters. No news articles, picture or other materials dated or acquired prior to that year may be used.
8. The entry will be organized in the following sequence:
 - a. Title Page
 1. Name of school
 2. Name of state
 3. Names of the Health and Safety Committee members
 4. High school or college/technical chapter
 - b. Table of Contents with page numbers
 - c. Calendar of events including dates of committee meetings
 - d. Introduction
 1. A description of how and why your chapter(s) decided that health and/or safety was to be included in your yearly program of work
 2. Documentation as to how the specific areas of health and/or safety were selected for emphasis

- e. Minutes of all official chapter business meetings that set the stage and gave direction or supported your projects
- f. Health and/or safety projects

Project Categories

There must be a total of four health and/or safety projects which must be selected from the five categories listed below. Two projects may be selected from one category with at least three different categories used. Failure to cover at least three categories will result in disqualification. Each project must be identified by the category name.

1. Shop/Laboratory Health and Safety Survey

The survey form in the contest rules and regulations may be used, or a customized survey prepared to fit a chapter's specific needs may be used. A customized survey form must be as comprehensive as the given form.

- a. Describe all aspects of implementing the survey, including planning, conducting the survey and final reporting.
- b. Describe any action taken as a result of identifying possible hazards in shown on the survey.
- c. A separate survey and description must be completed for each occupational area covered.

2. Machine and Equipment Safety

Describe in detail the safety instruction provided in a selected shop/laboratory regarding the operation of all power machines and equipment as well as general safety instruction. Included in the description should be the demonstrations, copies of safety rules, listing of audiovisual materials used and other pertinent information.

3. Workplace Inspection

- a. Visit a workplace to learn firsthand the degree of health and safety measures of employers and employees.
- b. Compare the health and safety concepts taught in the classroom to those encountered in the work place. Describe in detail the planning, site visit and general observations regarding health and safety practiced at the work place.

4. Specialized Health and Safety Project

- a. Develop a health and/or safety project chosen from the following categories. Document all activities involved in the project.
 1. Safety in lifting and moving heavy objects
 2. Heat stress and occupational respiratory protection
 3. Indoor air pollution safety
 4. Industrial hygiene
 5. Industrial protective clothing

- 6. Occupational vehicle driving
- 7. Plant/school building safety
- 5. Other**
 - a. Other industrial or occupational health and safety concerns as identified by the chapter safety committee

Project Criteria

1. Project Planning

Describe how interest was generated within your chapter for the specific safety project. Why was the project selected, or what was the need? Describe the steps the Health and Safety Committee followed to plan the project.

2. Scope of Activities

The project should be documented in such a way that it would tell a complete story if removed from the scrapbook. All news articles, announcements, photographs, official letters and other evidence that substantiates the project should be included and dated. Identify the committee members and all others who actually participated in the project. The amount of work and time that goes into a project will be considered when evaluating it.

3. Committee Minutes

All Health and Safety Committee minutes related to the project should be included in each project. It may be necessary to duplicate the minutes if more than one project is discussed at a meeting. One meeting each month is required; however, short-term projects may not be discussed at each meeting. Be sure that the minutes are dated.

4. Results Achieved

Describe and document the full impact that the project had on individuals, schools, businesses, industry and the community in general as appropriate to the project participated in the project. Report positive and negative (if any) outcomes of the project.

5. Layout/Presentation

Neatness, clarity, organization and presentation of material will be evaluated. Errors in spelling, punctuation and grammar will result in a reduction of points.

6. Interview

One person on the Health and Safety Committee whose name appears on the title page of the scrapbook will be interviewed by a panel of judges. The contestant will be asked questions pertaining to the scrapbook projects.

Note: All winning chapters are encouraged to send their notebooks by Aug. 1 to the National Safety Council for consideration of their national award. Send with a letter requesting entry into the NSC Youth Safety Awards Program to:

Youth Safety Specialist
National Safety Council
1121 Spring Lake Drive
Itasca, Ill. 60143

**SKILLSUSA CHAMPIONSHIPS
OCCUPATIONAL HEALTH AND SAFETY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	TEAM NUMBER							
Title page	30								
Table of Contents									
Calendar of Events									
Introduction	40								
Minutes	30								
PROJECT #1 Name: Planning	20								
Scope of Activities	30								
Committee Minutes	20								
Results Achieved	20								
Layout and Presentation	10								
PROJECT #2 Name: Planning	20								
Scope of Activities	30								
Committee Minutes	20								
Results Achieved	20								
Layout and Presentation	10								
PROJECT #3 Name: Planning	20								
Scope of Activities	30								
Committee Minutes	20								
Results Achieved	20								
Layout and Presentation	10								

continued

PROJECT #4 Name: Planning	20								
Scope of Activities	30								
Committee Minutes	20								
Results Achieved	20								
Layout and Presentation	10								
Interview	50								
TOTAL	550								

If notebook is disqualified, please state why (such as oversized or failed to verify minimum number of activities).

School _____ City _____
County _____ Date _____
Address _____
Shop _____
Survey by _____ Title _____

[illegible]

1. Machines, benches and other equipment are arranged so as to conform to good safety practices
2. Condition of stairways
3. Condition of aisles
4. Condition of floors
5. Condition of walls, windows and ceiling
6. Illumination is safe, sufficient and well placed
7. Ventilation
8. Temperature
9. Fire extinguishers are of proper type, adequately supplied, properly located and maintained
10. Teacher and pupils know location of, and use of, proper type extinguishers for various fires
11. The number and location of exits is adequate
12. Proper procedures have been formulated for emptying the room of pupils and taking precautions in case of emergencies
13. Lockers are inspected regularly for cleanliness and fire hazards..
14. Locker doors are kept closed

1. General appearance and orderliness
2. Adequate and proper storage space for tools and materials
3. Benches are kept orderly
4. Corners are clean and clear
5. Special tool racks, kept in orderly condition are provided at benches and machines
6. Tool, supply and/or material room is orderly
7. Sufficient scrap boxes are provided
8. Scrap stock is put in scrap boxes promptly
9. Materials are stored in orderly fashion and in a safe condition....
10. A spring-lid, metal container is provided for oily rags and waste
11. All waste materials and oily rags are placed in containers
12. Containers for oily rags and waste materials are frequently and regularly emptied
13. Dangerous (flammable, corrosive, reactive, etc.) materials are stored in separate metal cabinets

1. Machines are arranged so that workers are protected from hazards of other machines and passing students
2. Danger zones are properly identified
3. All equipment control switches are easily available to the operator
4. All machines are "locked off" when instructor is out of the room
5. Brushes are used for cleaning equipment
6. Non-skid areas are provided around machines
7. Machines are in safe working condition
8. Machines are guarded to comply with the State Industrial Code

OPENING AND CLOSING CEREMONIES



Purpose

To evaluate the contestants' understanding of the symbolic representation of the colors and assembled parts of the SkillsUSA emblem and to evaluate team-work and professional presentation skills.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with business-like white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members. The team need not be composed of officers, and team members may be from more than one section, but team members must be organized under one local charter and active members in the same division.

Observer Rule

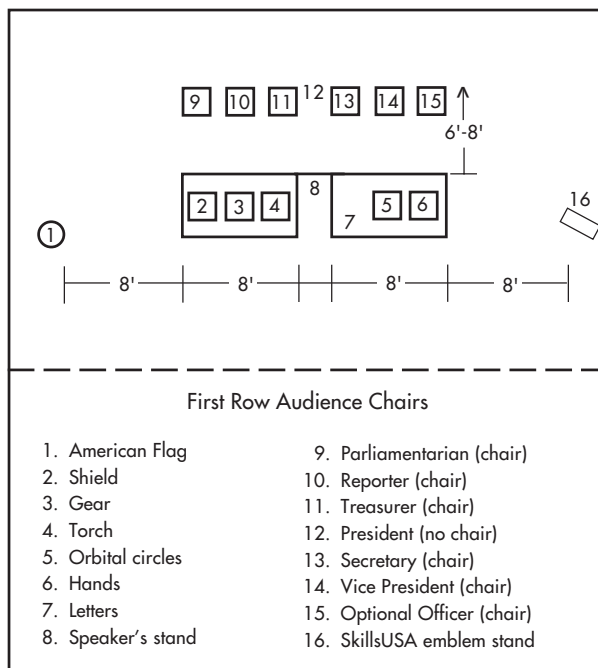
Observers will be allowed to view the demonstration provided space is available. No talking or gesturing will be permitted. No member of the audience is to leave or enter the demonstration room while a team is competing.

Scope of the Contest

1. Contestants will be judged on the following abilities:
 - a. Teamwork and coordinated movements of walking, standing and sitting
 - b. Memorization and recitation in unison
 - c. Good grooming in dress and personal hygiene
 - d. Pronunciation of words in a clear and understandable manner
 - e. Good platform deportment and confident appearance
 - f. Variances of voice pitch, tone, tempo and volume
2. The contest is a demonstration of the SkillsUSA Opening and Closing Ceremonies conducted according to the script and description as printed in these SkillsUSA Championships Technical Standards. No

other method of performing the ceremony will be allowed for the purpose of the contest demonstration.

3. Teams will draw numbers during the pre-contest orientation meeting to determine the order of performance and demonstration times. Only the president, team captain or other representative of the team will attend the pre-contest meeting.
4. Each team must consist of seven registered members in the roles of president, vice president, parliamentarian, reporter, treasurer, secretary and optional officer. **Note:** Each local chapter will determine the assignment of the optional officer (for example, historian, sergeant-at-arms or chaplain). The team may perform with six members without penalty in the event that a member fails to show up or was forced to withdraw within five days of the competition. Another officer will be assigned the missing part.
5. One member of the team will deliver the invocation or thought for the day.
6. There is no time limit for the demonstration.
7. The team will be allowed three minutes to properly assemble the contest paraphernalia before the demonstration begins. (No points will be awarded or deducted for method of setup.)
8. Only the official SkillsUSA emblem will be used.
9. The ceremony and procedures described in these SkillsUSA Championships Technical Standards will be used in the contest.



10. If notification is given to the national chair at the contestant orientation meeting that one or more team members cannot say the Pledge of Allegiance for religious reasons, no points will be counted against them. However, if no one on a team says the pledge, no points will be awarded.

Arrangement of Demonstration Room

The room provided will be arranged to seat an audience and will have a demonstration area at the front of the room. The room will be set up by the technical committee according to the diagram, as closely as possible, based upon the confines of the facility. The room will contain a center aisle, if facilities permit, and at least one side aisle.

Special Instructions To Contest Chairs

All judges must have thorough knowledge of the SkillsUSA Opening and Closing Ceremonies.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Official SkillsUSA emblem
 - b. Easel for emblem
 - c. U.S. flag
 - d. Gavel and sound block
 - e. Speaker's stand (lectern)
 - f. Two draped tables 8 feet long and 30 inches wide
 - g. Six chairs
 - h. Copy of SkillsUSA Championships Technical Standards for each judge
 - i. All necessary information and furnishings for judges and technical committee

Official SkillsUSA Championships Opening and Closing Ceremonies

Opening Ceremony

The officers will walk in from the outside entrance to their respective places and remain standing.

President: (Raps twice with gavel.) The meeting will come to order. The invocation or thought for the day will be given by the (designated officer). **Note:** The president must state only one, either "invocation" or "thought for the day," based on which will be presented.

Designated Officer: (Gives the invocation or thought for the day and returns to his or her seat.)

President: (Raps gavel once to seat the officers.) The emblem is symbolic of the SkillsUSA organization. You are about to witness the Emblem Ceremony, in which the meaning of each component of our emblem will be given and the significance of the colors described. (Raps gavel once, calls for the parliamentarian and steps directly back.)

Parliamentarian: (Picks up the shield and moves to speaker's stand.) The shield represents patriotism. (Pauses) The shield denotes our belief in democracy, liberty, and the American way of life. (Affixes the shield to the SkillsUSA emblem stand, calls for the reporter and returns to seat.)

Reporter: (Picks up the gear and moves to speaker's stand.) The gear represents the industrial society. (Pauses) The gear, symbolic of the industrial society, denotes the interdependence and cooperation of the individual working with labor and management for the betterment of mankind. (Affixes the gear to the SkillsUSA emblem, calls for the treasurer and returns to seat.)

Treasurer: (Picks up the torch and moves to speaker's stand.) The torch represents knowledge. (Pauses) The flaming torch reflects the light of knowledge, which dispels the darkness of ignorance. In the light of the torch, progress will be made toward the vocational goals of the individual. (Affixes the torch to the SkillsUSA emblem, calls for the secretary and returns to seat.)

Secretary: (Picks up the orbital circles and moves to speaker's stand.) The orbital circles represent technology. (Pauses) The circles represent the challenge of modern technology and the training needed to accept and master new technical frontiers and the need for continuous education. (Affixes the circles to the SkillsUSA emblem, calls for the vice president and returns to seat.)

Vice President: (Picks up the hands and moves to speaker's stand.) The hands represent the individual. (Pauses) The hands portray a search for knowledge and our desire to acquire a skill. In the process of attaining knowledge and skill, we will develop a respect for the dignity of work and become productive and responsible citizens. (Affixes the hands to the SkillsUSA emblem, calls for the optional officer or member and returns to seat.)

Optional Officer: (Moves to emblem. Pauses.) With the affixing of the golden hands, we add the final official color of SkillsUSA. The colors of the emblem represent our organization. Red and white represent the individual states and the chapters; blue represents the common union of the states and the chapters; and gold represents the individual, the most important element of SkillsUSA. (Calls for the president and returns to seat.)

President: (Picks up the letters "SkillsUSA" and moves to SkillsUSA emblem. Affixes the letters to SkillsUSA emblem. Pauses.) All of the components constitute our emblem. Separately, they could be applied to many organizations, but as one unit, they represent the fundamental principles and purposes of our organization. The emblem represents SkillsUSA. (Returns to position. Pauses. Raps three times with gavel for all to stand.) We will respect the flag with the Pledge of Allegiance.

In Unison: I pledge allegiance to the flag of the United States of America, and to the republic for which it stands, one nation under God, indivisible, with liberty and justice for all.

President: (Raps once with gavel for all to be seated.)

Closing Ceremony

President: Mr./Madame Secretary, have you a record of any further business to come before the meeting at this time?

Secretary: (Rises.) I have none, Mr./Madame President. (Is seated.)

President: Does any member know of any new or unfinished business which should come before this meeting? (Pauses for response.) Since there is no further business to come before the meeting at this time, we will prepare to adjourn. Since the rule is the basic instrument of our work, it is particularly fitting that we select the Golden Rule, "Do unto others as you would have them do unto you," to govern our lives. Let us speak our pledge.

(Raps three times with gavel for all to rise and leads in reciting the pledge.)

In Unison: UPON MY HONOR, I pledge

To prepare myself by diligent study and ardent practice to become a worker whose services will be recognized as honorable by my employer and fellow workers,

To base my expectations of reward upon the solid foundation of service,

To honor and respect my vocation in such a way as to bring repute to myself,

And further, to spare no effort in upholding the ideals of SkillsUSA.

President: I now declare this meeting adjourned until our next regular meeting or until a special meeting shall be called by your president. (Raps once with gavel.)

All officers exit the room in a formal manner.

**SKILLSUSA CHAMPIONSHIPS
OPENING & CLOSING CEREMONIES RATING SHEET**

ITEMS EVALUATED		POSSIBLE POINTS	TEAM RATING	REMARKS
I. Teamwork				
Coordinated Activity		8		
Pledge of Allegiance		8		
Emblem Handling		8		
Group Seating		8		
SkillsUSA Pledge		8		
II. Individual Team Member				
Voices Pitch, tempo, volume, enthusiasm	President	25		
	Parliamentarian	10		
Stage Presence Poise, posture, eye contact, attitude and gracefulness	Reporter	10		
	Treasurer	10		
Mechanics Diction, pronunciation, enunciation, memorization and chronological presentation	Secretary	10		
	Vice President	10		
	Other	10		
III. Accuracy of presentation		40		
IV. General team appearance Uniformity of dress, personal grooming and neatness		35		
Clothing Penalty (minus 2 points for each member in violation)				
TOTAL POINTS		200		

OUTSTANDING CHAPTER



Purpose

To evaluate local chapter activities that benefit the student members, the school and the community. The Outstanding Chapters chosen each year serve as an example of the enthusiasm and careful planning necessary to keep chapters active and to involve as many members in activities as possible.

First, refer to General Regulations, Page 9.

Clothing Requirement (Interview)

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

All state first place winners may be entered in national competition. There is one high school and one college/postsecondary competition per state.

Deadline

The Outstanding Chapter entry will be brought to the National Leadership and Skills Conference (NLSC) and SkillsUSA Championships and submitted to SkillsUSA Championships Headquarters no later than noon on the Tuesday immediately prior to the SkillsUSA Championships. A card with the name of the state, school, and interview student must be taped on the inside of the cover of the notebook.

Exhibit of Entries

Outstanding Chapter entries will be displayed in a specially secure area following the judging. Observers will be allowed to view them at designated times during the conference.

Pickup of Entries

Outstanding Chapter entries will be picked up the last day of the National Leadership and Skills Conference by the advisor or state association director or upon presentation of a letter of authorization from the appropriate state association director. They will not

be released to an unauthorized person. Chapters will be charged \$10 for the return of their entries following the national conference.

Scope of the Contest

1. The chapter will organize the year's activities and record them in an official SkillsUSA scrapbook with a completed secretary's and treasurer's notebook available from the SkillsUSA Merchandise Catalog.
2. Awards will be presented in two categories:
 - a. High School Division will recognize a first-, second- and third-place winner.
 - b. College/Postsecondary School Division will recognize a first-, second- and third-place winner.
3. The Outstanding Chapter entry will:
 - a. Contain verification, proof or evidence of the activities claimed and the date they were accomplished.
 - b. Be in an official SkillsUSA scrapbook from the SkillsUSA Merchandise Catalog.

Note: Different pages may be substituted for pages supplied in the official SkillsUSA scrapbook or the pages may be covered; however, both front and back covers must be used without alteration.

Penalty: Ten points will be deducted for alteration to either cover.
 - c. Number of pages allowed: no more than 75 sheets of paper the size of the official SkillsUSA scrapbook paper. Both surfaces of the 75 sheets may be filled for a maximum of 150 surfaces.

Penalty: Five points per surface (10 points per sheet of paper) will be deducted for exceeding these maximums.

Note: A surface is only that material which can be pasted or glued to the basic scrapbook paper. Any pockets, fold-out pages, multiple pages or similar features will count as additional surfaces and will be subject to penalty, except where specifically stated otherwise. Pages may be plasticized without affecting the scores.
4. The scrapbook must be organized by activity in the same sequence as the rating sheet.

Penalty: Ten points will be deducted for each activity that is out of sequence. Points may be claimed only for chapter activities that were accomplished during the year in which the entry is made, except as noted. Summer activities may be included, but a chapter may not claim points for activities that were a result of the previous year's chapter.
5. Points used in one section may not be claimed in another section. For example, social meetings

may not be counted as both social and professional meetings. However, newspaper articles describing chapter activities may still receive publicity credit under Newspaper Publicity.

6. Points will be awarded based on verification and/or documentation of activities described in the following order:
 - a. The first surface of the scrapbook will be a title page.
 - b. The Table of Contents may be on the back surface of the title page or the front of Page 2 (third surface) with page numbers included.
 - c. All surfaces will be numbered.

Part 1—School-Related Chapter Activities (Total Points 645)

1.1—Chapter Membership (50 points)

1. Points will be based upon the percentage of SkillsUSA members compared to the enrollment in SkillsUSA. One-half point will be awarded for each one percent of membership. For example, if there are 40 eligible students and 20 of them join SkillsUSA, the membership is 50 percent, for a total of 25 points.
2. **Verification:** An official letter from the local school administrator verifying class enrollment and actual SkillsUSA membership must be submitted in this section of the scrapbook.
3. Copies of an official listing of members submitted to the state association must be placed in the secretaries notebook.

1.2 — Participation in Chapter Standards (100 points)

1. The chapter (advisor and all members) must register as an official Chapter Standards site. Advisors should register by going to *www.skillsusa.org*. (Advisors must register prior to students.) *One page: photocopy of participation certificate or decal.*
2. All chapter members must complete all pre- and post- self assessments on the Chapter Standards site and describe the following:
 - a. How the pre-test results were used to choose chapter activities
 - b. How the final results demonstrated student improvement*One page essay*
3. The chapter must demonstrate use of the Cycle of Learning for two chapter activities. (Include hard copies of the Cycle of Learning plans.)

1.3 — Official SkillsUSA Equipment (18 points)

1. Two points will be awarded for having each of the following official SkillsUSA equipment in the classroom:
 - a. Banner
 - b. SkillsUSA secretary's notebook
 - c. SkillsUSA treasurer's notebook
 - d. Ceremonial emblem
 - e. Gavel
 - f. U.S. flag
 - g. *Robert's Rules of Order, Newly Revised*
 - h. Creed
 - i. Charter

Verification: One photo clearly showing these items must be submitted. The photo must be taken in such a way that all writing can be read on the items displayed.

Note: Two points will be deducted for each missing item.

1.4 — SkillsUSA Program of Work (50 points)

1. Describe the methods or procedure used to determine the local SkillsUSA program of activities for the year. A minimum of five committees must be established. The description must indicate a minimum of the following items:
 - a. List each committee and the names of members
 - b. Provide the date, time and a list of attendees for all committee meetings
 - c. Copies of the minutes of all committee meetings must be placed in the secretary's book. In the scrapbook, reference the page in the secretary's book where each committee meeting is located
2. Consider the following committees:
 - a. Professional Development
 - b. Ways and Means (Budget)
 - c. Community Service
 - d. Local SkillsUSA Championships
 - e. Employment
 - f. Public Relations
 - g. Social
3. Points will be awarded based on a written description of the chapter's program activities, which must include the following for each activity:
 - a. Provide written evidence the committee met for planning purposes.
 - b. Describe each committee's responsibilities.
 - c. Describe how the planning for each committee function was carried out.

Note: The total description of the chapter's program of activities should be no more than three pages in length and will count as only one surface.

1.5 — Leadership Training for Officers and Members (100 points)

1. Describe how chapter officers were prepared to conduct chapter meetings and provide leadership for the chapter.
2. Describe how chapter members were taught to effectively use parliamentary procedure in conducting their business meetings. This description should include classroom type procedures taught by chapter advisors in addition to any workshops attended by members for the purpose of learning parliamentary procedure. The description should include the *Advisor's Success Kit (ASK'04)*, which contains material from the no-longer-available *Meetings Kit* and *Teacher's Tool Kit* as a reference. *ASK* is available for order from the SkillsUSA Educational Materials Catalog or by calling 1-800-321-8422.
3. Describe your installation of chapter officers. Points will be awarded for a written description of activities, which must include:
 - a. Evidence of planning. (Describe how the installation ceremony was planned.)
 - b. Schedule of activities. (Where did the installation ceremony take place? Who participated in the installation process? How many members were in attendance?)
 - c. Method of implementation. (Provide a description of how the ceremony was conducted. The description must include reference to the installation ceremony as found in the *SkillsUSA Leadership Handbook*.)
4. Describe your induction of new members. Points will be awarded for a written description of activities, which must include:
 - a. Evidence of planning. (Describe how the initiation ceremony was planned.)
 - b. Schedule of activities. (Where did the initiation ceremony take place? Who participated in the installation process? How many members were in attendance?)
 - c. Method of implementation. (Provide a description of how the ceremony was conducted. The descrip-

tion must include reference to the initiation ceremony as found in the *SkillsUSA Leadership Handbook*.)

5. Photos of all events must be included.

1.6 — Business/Professional Chapter Meetings (90 points)

1. The chapter must hold a total of nine meetings between the months of July 1 and May 30 of the current school year. No meetings relative to activities conducted the previous year may be counted.
2. Credit will be given for one meeting per month (two or more meetings in the same month will count only as one monthly meeting).
3. A minimum of six meetings must include one or more of the following: a guest speaker, field trip, films or professional development activities. The description of the meeting should indicate if the meeting was one of the six required as described.
4. A written report of each meeting must be provided. The report shall include the planning for each meeting, how the planning was carried out, and number of members participating in each meeting. Reference should be made in this section as to the page number of the minutes of each meeting in the secretary's notebook.

1.7 — Social Activities (22 points)

1. Social activities are defined as informal activities such as a party or dance. All students must have an opportunity to participate in activities claimed. Credit will be given for only two activities. A written description must be presented to include the following:
 - a. Objective of the activity
 - b. Evidence the event was planned by a committee
 - c. A description of how the activity was conducted
 - d. How many members participated?
 - e. Date, time and place of activity
2. A minimum of one photograph for each activity must be included.

1.8 — Newspaper (SkillsUSA Publicity) (90 points)

1. Zero to 15 points will be given for each public relations activity of the local chapter designed to promote SkillsUSA membership, class enrollment, career and technical education, or community awareness of SkillsUSA. SkillsUSA must be mentioned in the publicity article or credit will not be given.

2. Three activities must be related to the following:
 - a. Participating in a radio program (must be related to local SkillsUSA chapter)
 - b. Participating in a television program (must be related to local SkillsUSA chapter)
 - c. Conducting assembly programs (must be related to local SkillsUSA chapter activities)
 - d. Participation in civic or professional group activities (must be to assist the civic or professional group)
 - e. Presentation to civic or professional group (to promote local SkillsUSA chapter)
 - f. Trade or labor organization participation (cannot be related to Part 4, Business/Industry activities)
3. At least three activities must be newspaper publicity. Original copies of newspaper articles must be submitted. Dates of the article must be within the article or a letter of verification from the editor must be submitted. Photocopies of articles are not acceptable. Credit will not be given for newspaper activities resulting from Item 2 above.
4. At least three or more members must be involved in each activity. Name(s) must be listed in the description.
5. A description of each activity must be written. The description will include the following:
 - a. Objective of the activity
 - b. Evidence activity was planned by a committee
 - c. Description of how activity was conducted
 - d. Number of members who participated in each activity
6. Photographs may be included.

1.9—Awards and Recognition Program (75 points)

1. The Awards and Recognition Program should be designed to recognize the contributions of program advisory committee members, chapter members, SkillsUSA chapter achievements, employer or advisory committee banquets, assembly programs for recognition or special occasions (must be related to accomplishments of the SkillsUSA chapter or members)
2. Credit will be given for only one program.
3. A written description of the activity must be presented. Points will be awarded as follows:
 - a. What is the objective of the activity?
 - b. Provide evidence a committee planned the activity
 - c. Describe how the activity was conducted
 - d. List in the description the number of members participating.
4. A minimum of one photograph must be submitted.

1.10—Local SkillsUSA Championships (100 points)

1. Points are based on 20 points for each of five SkillsUSA Championships contests conducted on the local level in which the chapter members participated. Credit will be given only for those contests of leadership or occupational preparation offered in the *SkillsUSA Technical Standards*. At least one of the five contests must involve occupational skills.
2. Points will be awarded for:
 - a. Evidence that a committee planned the local event
 - b. A written description of each contest to include date, time, and location of contest; names of contest technical committees; names of judges for each event; names of contestants in each contest.
3. **Verification:** The local school administrator must sign a statement verifying that the local SkillsUSA Championships events were held.
4. Pictures of each contest must be submitted. (The photographs must show the contestant[s], judges and contest area.)

1.11—Professional Development Program (50 points)

1. Two points will be awarded on the basis of the number of members who have achieved Levels 1 to 5 of the Professional Development Program.
2. Guidelines and rules as outlined in the Professional Development Program must be followed in acquiring the levels.
3. Names of SkillsUSA members, name of each member's training program and dates of all achievements must be included.
4. Cooperative education students must include the name of the job for which they are training, such as auto service technician or watch repairer, not ICT or CIE. Individual members may earn points in one or more levels of this program.
5. Students will receive two points credit for each level achieved in the Professional Development Program, including those levels awarded in previous years.

6. **Verification:** A letter from the local school administration must verify points claimed.

Part 2—Community Activities (300 points)

These activities should benefit the community. (Examples: project to help a needy family, cleanup or paintup campaign, health promotion activity, safety program, blood drive, project to assist special populations, voter registration drive.) All activities must be conducted within the community and not on the school campus. Pictures must show some SkillsUSA members in SkillsUSA attire while participating in the event.

1. Credit will be given for three activities (100 points each)
2. Points will be awarded by writing a description of each activity to include the following:
 - a. Objective of the activity
 - b. Evidence the activity was planned by a committee
 - c. Written description as to how the activity was conducted
 - d. Names of all participants in the activity
 - e. List of place, time and date for each activity
 - f. Evidence of students dressed in SkillsUSA attire
3. A list of community activities included in the previous year's Outstanding Chapter contest must be submitted. No credit will be given during the current year for any activity that occurred in the previous year. There must be a one-year absence before any activity is repeated.
4. A minimum of one photograph for each activity must be submitted. The photograph must show students involved in the activity as it took place.

Part 3—Business and Industry Relations (200 points)

In this section, the chapter must include a written description of at least two business and industry related activities (100 points each). A list of suggested activities may include, but is not limited to, the following:

- Business and Industry tour
- Business and Industry Shadowing Program
- Business and Industry Work-Based (Coop) Program
- Service Learning Activity/Community Service Activity
- Partners in Progress
- Job Fair

A detailed description of each activity must be included. The description should indicate how the chapter and the business community work together for the benefit of the students enrolled in the SkillsUSA chapter. The following information must be included in the description:

1. Name of the committee and committee members who planned the activity (reference to the page number in the secretary's minutes for the committee meeting minutes)
2. How the activity was carried out
 - a. List the names of all participants in the activity.
 - b. List the date of the activity and a description of the day's events.
 - c. Describe the benefit received by participants.
 - d. Describe the benefit to the host business/industry.

A minimum of one photo for each activity showing students involved must be presented. This activity should include an opportunity for all chapter members to be involved. Photos must show some SkillsUSA members in SkillsUSA attire while participating in the event.

The local business/industry must provide a letter of verification for the activity. Only one event per business/industry is allowed. The second event must be conducted with another business/industry.

Part 4—General Appearance and Overall Layout(20 points)

Points will be awarded on the basis of the overall quality of the Outstanding Chapter entry. The uniformity of presentation, neatness, clarity of material, quality of pictures and printed material will be considered.

Part 5 — Secretary/Treasurer Notebook (35 points)

Twenty points will be awarded for the secretary's notebook, based on:

1. Membership and attendance rosters
2. Chapter yearly calendar of activities
3. Names of committee members and complete minutes of all committees
4. Minutes of all business and professional meetings
5. Names of local and state officers and national presidents
6. Local, state and national constitutions

Fifteen points will be awarded for the treasurer's notebook, based on:

1. Projected budget
2. Dues payment record for local, state and national dues
3. Monthly income record
4. Monthly expense record
5. Year beginning and ending balance

Note: The secretary's and treasurer's notebooks are submitted separately. Points will be awarded based on meeting the requirements listed and for the neatness and clarity of the notebooks.

Part 6 — Student Interview (100 points)

After all scores are calculated, only the top five chapters in the high school division and the top five

chapters in the college/postsecondary division will be eligible for the additional points. Up to 100 points will be awarded based on the interview. An interview schedule will be posted by contest judges no later than 3 p.m. on the day of the contest. The interview will be with one student designated by the advisor. Students will have an opportunity to explain how they approached various activities and how the Outstanding Chapter project benefited their class and/or school. The interview will be used to help verify points awarded by the judges and to answer any questions they may have.

**SKILLSUSA CHAMPIONSHIPS
OUTSTANDING CHAPTER RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CHAPTER NUMBER							
Part 1.1 Chapter Membership	50								
1.2 Participation in Chapter Standards	100								
1.3 Official SkillsUSA Equipment	18								
1.4 SkillsUSA Program of Work	50								
1.5 Leadership Training for Officers/Members	100								
1.6 Business/Professional Chapter Meetings	90								
1.7 Social Activities	22								
1.8 Newspaper (SkillsUSA Publicity)	90								
1.9 Awards and Recognition Program	75								
1.10 Local SkillsUSA Championships	100								
1.11 Professional Development Program	50								
Part 2 Community Activities	300								
Part 3 Business and Industry Relations	200								
Part 4 General Appearance and Overall Layout	20								
Part 5 Secretary/Treasurer Notebook	35								
Part 6 Student Interview	100								
SUBTOTAL	1400								
PENALTY POINTS									
TOTAL SCORE									

PREPARED SPEECH



Purpose

To evaluate each contestant's ability to prepare and present clearly and effectively a series of thoughts relating to a central theme.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members.

Observer Rule

Observers will be allowed to hear the speeches in the presentation room provided space is available. No talking or gesturing will be permitted. No observers will be allowed in the assembly area. No member of the audience will be permitted to enter or leave the demonstration room while a contestant is speaking. No cameras, video recorders or tape recorders will be allowed by members of the audience.

Equipment and Materials

1. Supplied by the technical committee: Committee membership includes the Farm Service Agency.
 - a. Stopwatch
 - b. Time cards
 - c. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. A single note card, if desired

Scope of the Contest

1. Contestants should prepare for public speaking by developing the following competencies:
 - a. Make a formal introduction
 - b. Demonstrate good grooming in dress and

- personal hygiene
 - c. Understand and practice elements of informal conversation
 - d. Prepare a presentation on a given topic for a specific time
 - e. Demonstrate an effective and pleasing delivery style
 - f. Effectively use verbal illustrations and examples
 - g. Pronounce words in a clear and understandable manner
 - h. Demonstrate good platform deportment and personal confidence
 - k. Organize speech material in a logical and coherent manner
 - l. Effectively vary voice in pitch, tone, tempo and volume
2. The topic for the prepared speech will be established by SkillsUSA and will be announced to the state associations by Sept. 1 for the following year.
3. The speech shall be five to seven minutes in length. Penalty: Five points will be deducted for each 30 seconds or fraction thereof under five minutes or for each 30 seconds or fraction thereof over seven minutes.
4. Time limit: Time will be started when the speech begins. The timer will signal the speaker at five minutes and at seven minutes. The contestant will be permitted to use a watch or clock.
5. A single note card will be permitted. The card should be no larger than 4"x6" so as not to detract from the effectiveness of the speech. No other visual aides or props will be permitted
6. Contestants will not mention their name, school, city or state. A five-point penalty will be assessed for each occurrence.
7. Contestants may submit one typewritten copy of the speech to the technical committee prior to the debriefing meeting. Include the name of the training program, institution name, contestant's name, address, phone number and the speech title. This speech may be used in part or in whole in SkillsUSA publications throughout the year. Credit will be given to the contestant, instructor and the school.

Arrangement of Rooms

1. Speech presentation room — A room will be furnished with two tables for judges and time keeper. Additional seating will be available for audience members based on the size of the presentation room. No speaker's stand (lectern/podium) will be used.

**SKILLSUSA CHAMPIONSHIPS
PREPARED SPEECH RATING SHEET**

CONTESTANT # _____

High school ☐

Semifinals ☐

ROOM # _____

College/postsecondary
Finals ☐

DATE _____ / _____ / _____

☐

ITEMS EVALUATED	POSSIBLE POINTS	SCORE	COMMENTS
Opening Appearance Introduction	10 5		
Voice (pitch, tempo, volume, enthusiasm)	10		
Platform Deportment (gestures, poise, eye- contact, mannerisms)	10		
Organization (logic, clarity, suitability, coherence)	20		
Mechanics (diction, grammar, pronunciation, word picture)	10		
Closing (summary, conclusion)	15		
Effectiveness (assigned topic covered, purpose, impress, inform, persuade)	20		
SUBTOTAL	100		
TIME PENALTY (Minus 5 points for each fraction of 30 seconds under 5 minutes or over 7 minutes)			
OTHER PENALTIES			
CLOTHING PENALTY (minus 0 to 5 percent of total points)			
TOTAL POINTS			

PROMOTIONAL BULLETIN BOARD



Purpose

To encourage local SkillsUSA chapters to promote the organization, career and technical education and related occupational information through a promotional bulletin board.

First, refer to General Regulations, Page 9.

Clothing Requirement (Interview)

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Two bulletin boards from each state association may be entered in the contestone in high school and one in college/postsecondary competition.

Observer Rule

Observers will not be present during the actual judging. Promotional Bulletin Boards may be viewed on the day of the SkillsUSA Championships.

Scope of the Contest

1. The bulletin board must carry out a theme related to SkillsUSA, but it may also include promotion of local SkillsUSA chapter activities or technical, skilled and service occupations, including health occupations.
2. The theme for the Promotional Bulletin Board contest will be established by the SkillsUSA national headquarters and will be announced to the state associations by Sept. 1 for the following school year. To verify the correct national theme, go to www.skillsusa.org/theme.html.
3. The majority of the display materials used must be student prepared. The bulletin board must be the original and creative work of the individual chapter member or members.

4. The total bulletin board may be smaller than, but may not exceed the following dimensions: 4' wide by 4' high by 2" thick (including the thickness of the board). A penalty of five points per 1/8" over size will be assessed.
5. The quality of the board on which the display is mounted will not be considered in judging since it is required that the entire backing board must be covered with a paper product. Any exposed area will be assessed penalty points as determined by judges.
6. No audiovisual equipment, electrical, mechanical, automatic, or manual moving parts are to be used.
7. The Promotional Bulletin Board is not intended to be a wall hanging but a means of conveying ideas and ideals that will change from time to time. Wood carvings, stained glass, metal etching and similar embellishments may be used as a frame but may not be used in the theme of the exhibit. A frame not to exceed 1 1/2" in width may be used (made of any material) but it is not required. A penalty of five points per 1/8" over size will be assessed.
8. The chapter name, school, city or state may be used without penalty.
9. Student-taken photographs are allowed.
10. A maximum of \$100 (purchased, donated or borrowed) may be spent on the entire display, including the board. The fair market value of all donated materials must be included in the \$100.
11. All materials on the bulletin board used as background and to convey the message will be limited to the following paper products:
 - construction paper
 - poster board
 - foam core
 - cardboard
 - mat board

All materials may be painted or colored and may be plastic laminated. No other materials such as plastic, metal foil, wood, glass or metal will be allowed except in the frame.

12. One student shall be prepared to participate in an interview component. The interview component will consist of two parts: a presentation and a question/answer session. The presentation component will be three to five minutes in length during which the student will describe the bulletin board and how it conforms to the theme, explain the process that the chapter followed to determine the scope and design of the bulletin board, state the purpose and educational value of the bulletin board, discuss the chapter members' participation in the construction of the bulletin board, tell where and how the bulletin board will be used after the competition, and explain the benefits of the bulletin board to the chapter members. A time penalty of five points for each

fraction of 30 seconds under three minutes or over five minutes will be assessed

13. A 1" SkillsUSA three-ring binder containing pictures and a brief description of the purpose, educational value, development and construction of the bulletin board must accompany the bulletin board. The notebook must be limited to 10 pages (20 surfaces) or less. The interviewing student should know the content of the notebook and the benefits of the bulletin board to the chapter members. The interviewing student should use the notebook along with the bulletin board during the presentation and question/answer sessions to assist the judges with conducting the interview component.
14. Verification: A letter signed by the local school administrator certifying that the bulletin board was designed and constructed by students will be the first page of the notebook. The letter must contain an itemized list of all expenses and identify the school, city, state, local advisor and the student that will be interviewed. The letter should also state the division (high school or college/postsecondary) entered. Failure to supply adequate information will penalize the entry 1 to 25 points, depending on the severity of the omission.
15. The notebook must be placed with the bulletin board prior to judging. Failure to do so will result in the notebook not being judged and no points awarded.
16. Entries must be self-supporting. The supporting device will not be included in the measurement and cost figures. The supporting device must be designed and constructed to be durable and allow for safe exhibit of the board and display materials. The bulletin board must be fastened securely to the supporting device. A penalty of 10 points is possible for failure to comply.

Procedure for Shipment and Setup

1. The Promotional Bulletin Board entries may be shipped to the official convention center decorator. Shipping instructions may be obtained from your state association director. Do not ship entries to the SkillsUSA national headquarters or to the convention center. Such shipments will be refused. All costs incurred will be the responsibility of the local chapter or the state SkillsUSA association.
2. The bulletin board must be set up and moved according to the schedule outlined in the National Leadership and Skills Conference program.
Note: The SkillsUSA national headquarters will not be responsible for bulletin boards that have not been removed from the exhibit area by noon on the day following the SkillsUSA Championships. Failure to do so could result in their damage or destruction by the cleanup crew.
3. Only two students will be allowed to set up the bulletin board and will be issued passes into the contest setup area. Students must stay in the designated area. Failure to do so will result in disqualification of the bulletin board entry.

**SKILLSUSA CHAMPIONSHIPS
PROMOTIONAL BULLETIN BOARD RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	TEAM NUMBER							
ORAL PRESENTATION:									
Presentation	50								
Response to questions	50								
Use of Notebook and Bulletin Board	50								
BULLETIN BOARD:									
Gains Attention	50								
Development of Theme	50								
Effectiveness	50								
Quality	50								
Imagination	50								
NOTEBOOK:									
Letter	50								
Contents	50								
SUBTOTAL	500								
PENALTY POINTS									
Dress									
Size (5 pts. per 1/8" over), materials, self supporting									
Interview/Presentation Time (5 pts. for every 30 seconds, or fraction thereof, under or over time limit)									
TOTAL									

QUIZ BOWL



Purpose

To test the knowledge of selected team members on various aspects of general academic knowledge, professional development (including, but not limited to: *SkillsUSA Leadership Handbook*, Professional Development Program, Total Quality Curriculum, Career Safe, *USA Today* and *Robert's Rules of Order, Newly Revised*) and current events.

First, refer to General Regulations, Page 9.

Clothing Requirements

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer, windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members currently enrolled in technical, skilled and service occupations, including health occupations.

Observer Rule

Observers will be allowed to watch the match providing space is available. No talking or gesturing will be permitted. The event chair or moderator may remove observers and/or close the event to observers for cause.

Equipment and Materials

1. Supplied by the technical committee:
 - a. One table for each team plus a table for the apparatus and scorekeeper and sufficient tables for the judges
 - b. Chairs for all participants, committee and judges.
 - c. Podium and, if necessary, a public address system
 - d. Quiz Bowl apparatus
 - e. Audience chairs
 - f. Sufficient score sheets and pencils for judges

- g. Paper for the team members
- h. Calculators for contest officials
2. Personnel required:
 - a. Moderator
 - b. Operator for the Quiz Bowl apparatus/time-keeper
 - c. Judges who will serve as scorekeepers

Scope of the Contest

1. A state may enter one high school team and one college/postsecondary team comprised of five registered members each. The team may perform with four members without penalty in the event that a member fails to show up or is forced to withdraw within five days of the competition, as long as five members were originally registered and verified in the national headquarters.
2. The moderator will ask questions, and teams will have five seconds to respond. Responding shall be accomplished by activating the buzzer.
3. *Approximately* 30 percent of the questions asked will be about professional development issues, 30 percent will be about current events, and 40 percent about general academic knowledge. Points are awarded on the basis of one point awarded for a correct response and one point deducted for an incorrect response.
4. A round shall be defined as 100 questions, with no time limit.
5. A match shall be defined as two rounds, which includes a preliminary round and the final round.
6. A break will be taken after every 25 questions. Contest officials will verify scores at every break.
7. During the pre-contest orientation session, the contest chair will administer a written test to all team members. All team members must take the written test to be eligible to participate with their team in the active rounds. Participants are responsible to bring a #2 pencil to use for the written test.
8. The written test questions shall follow the same question formula as the active rounds and be based upon 100 points. Once scored, the individual scores will be averaged to create a team score. The written test team score will be used for seeding teams to competition rooms for the preliminary round.
9. Each team will be assigned a table location at the beginning of the event by the contest chair or moderator.
10. The moderator will read a question and the team that presses the buzzer first will be recognized to answer the question. If a wrong response is given, the team cannot give a second answer and the opposing team(s) will be given an opportunity to buzz in and answer the question. One point will be awarded for a correct answer. One point will be deducted from any team that gives an incorrect answer.

11. A team may buzz in as soon as it feels it knows the answer. However, the moderator will stop reading the question and the team must answer based upon what has been read to that point. Some questions may require multiple answers.
12. Once a team buzzes in, it must wait to be identified by the moderator. Any team that responds to the question before being recognized by the moderator will be scored with an incorrect answer.
13. Once recognized, the team members may confer among themselves but must respond within five seconds. In the event that a team misses an answer, unless another team buzzes before the moderator can begin or finish the question, the moderator will begin re-reading the question following the procedure outlined above for the other teams. A question will not be reread during actual play except upon the request of a judge.
14. Only the first answer given will be considered. If it is a wrong response, the team cannot give another answer and another team is to have an opportunity to respond to the question. If the moderator inadvertently gives the answer away, the question is voided.
15. Any team member may give the team's answer.
16. If the answer is incomplete, the moderator may ask the team member to be more specific. For example, if the correct answer given is Roosevelt, the moderator may ask which one, or for more information.
17. The moderator will give the correct response in the event no team gives the correct answer.
18. Teams may not use notes, reference materials or calculators. Blank paper will be provided by the officials and taken up at the end of each round. Participants will supply their own pens or pencils to use during the round.
19. A panel of judges will make the final ruling on correct or incorrect responses.
20. The Quiz Bowl apparatus will maintain the official time, which is used only for responding to questions.
21. There will be no true/false or multiple choice questions in the active rounds.
22. In the event that a team believes that an incorrect answer was accepted or a correct answer was not accepted, it may offer a challenge. Only team members, at the point at which they occur, may make challenges. Challenges may not be made once the next question is read.
23. Topics for general academic knowledge may include but shall not be limited to: science, math, history, geography, English (including literature), spelling, government, the arts and music.
24. Professional development questions may be drawn from (but not limited to) the following sources: *SkillsUSA Leadership Handbook*, CareerSafe, Professional Development Program, Total Quality Curriculum, Advisor's Success Kit, *USA Today* and *Robert's Rules of Order, Newly Revised*.
25. The source for current events questions will be *USA Today*. Items will be taken from issues published no more than three months prior to the date of the contest. The sources can be print, media or online versions.
26. In the event that the audience gives away an answer, the moderator may void the question with no penalty for any team.
27. The written test team score will be used as a tiebreaker during the active rounds. No tiebreaker rounds will be conducted.
28. For the preliminary round score, 80 percent of the team's active score plus 20 percent of the team's average written score will be used. The preliminary round will be used as an eliminator, if necessary. For the final round, 80 percent of the team's active score plus 20 percent of the team's average written score will serve as the final score. The final score will be used to determine the medallion winners.

SkillsUSA Championships

Technical Standards

2005–2007

Health Occupations Contests



Basic Health Care Skills
Dental Assisting
Health Knowledge Bowl
Health Occupations Professional Portfolio
Medical Assisting
Nurse Assisting
Practical Nursing

BASIC HEALTH CARE SKILLS



Purpose

To evaluate each contestant's beginning level of health occupations knowledge and to recognize outstanding students for excellence and professionalism.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official blue scrubs, white socks or clear seamless hose and white leather health professional's work shoes. Shoes must be all-white leather (no canvas), completely enclosed (no open toe or open heel). Athletic style shoes that meet the aforementioned criteria are acceptable. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to students enrolled in any high school health program and to active high school SkillsUSA members enrolled in nonspecific health occupations programs designed to assist students in making a career choice.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All instruments, equipment and materials required for the contest
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Watch
 - b. Pen (black ink)
 - c. Safety glasses/shield
 - d. Three (3) copies of your one-page, typewritten résumé

Health Occupations Core

1. Academic Foundations
 - a. Apply knowledge of human structure and function to client care situations
 - b. Apply concepts of basic human needs to client care
 - c. Apply knowledge of nutrition
 - d. Apply basic mathematical concepts
2. Communication Skills—Core
 - a. Demonstrate oral, written and telephone communication skills with patients, families, staff

- b. Modify communication to meet client needs
 - c. Spell, pronounce, define and utilize medical terms and abbreviations
 - d. Observe, report and document pertinent patient data
 - e. Demonstrate effective interpersonal relationships
 - f. Be sensitive to multicultural and multilingual needs
 - g. Provide for emotional support of client during procedure/treatment
3. Safety — Core
 - a. Report and/or correct safety hazards
 - b. Apply principles of body mechanics
 - c. Maintain equipment in proper working order
 - d. Maintain a safe client environment
 - e. Follow emergency procedures
 - f. Verify identity of client
 - g. Use precautions in the presence of ionizing radiation
 - h. Manage hazardous materials
4. Infection Control and Asepsis — Core
 - a. Perform correct handwashing technique
 - b. Utilize appropriate personal protective equipment
 - c. Identify at-risk behaviors and modes of transmission of pathogens
 - d. Utilize standard precautions outlined by the CDC
 - e. Apply principles of medical asepsis
 - f. Clean and restock client environment
 - g. Apply principles of disinfection
5. Asepsis—Advanced
 - a. Create and maintain sterile field
 - b. Don and remove sterile gloves/gown
 - c. Assist with minor surgical procedures
 - d. Apply principles of sterilization
 - e. Clean, disinfect and sterilize surfaces, instruments, supplies and equipment utilizing appropriate methods
 - f. Prepare and/or package equipment for sterilization
6. Ethical/Legal
 - a. Operate within the legal framework of liability in his/her scope of work
 - b. Maintain confidentiality in the health care setting
 - c. Explain client rights
 - d. Recognize and report signs of neglect and abuse
7. Employment Skills
 - a. Exhibit personal skills, such as attendance, time management, individual responsibility and teamwork
 - b. Maintain professional conduct and appearance
 - c. Complete job application and résumé
 - d. Demonstrate interview skills

- e. Prepare correspondence related to the employment process

Scope of the Contest

1. Contestants will demonstrate their knowledge and ability to perform procedures or skills selected from the following list of competencies as determined by the SkillsUSA Championships Health Occupations Technical Committee. Committee membership includes The Ohio State University Medical Center. These skills may be evaluated through a written test and/or a skill performance:

a. Career Opportunity Concepts

1. Identify major categories of health careers (such as medicine, dentistry and veterinary medicine)
2. Identify educational requirements for the major categories of the health careers
3. Identify the role and responsibilities of the various levels of individuals within the health care profession

b. Ethical and Legal

1. Differentiate between ethics and law
2. Explain situations which have the potential for legal problems
3. Define key terminology related to ethics and law

c. Academic

1. Identify the hierarchy of needs existing in humankind (Maslow)
2. Recognize the basic food groups
3. Identify the six essential nutrient groups, their function and sources
4. Demonstrate basic principles of therapeutic communication

d. Emergency Care

1. Perform basic adult CPR
2. Demonstrate emergency measures for choking
3. Demonstrate various treatments to control severe bleeding
4. Demonstrate various treatments for the different types, symptoms and stages of shock
5. Demonstrate use of standard first aid bandages and splints
6. Identify first aid for the following common medical emergencies:
 - a. Heart attack
 - b. Seizures
 - c. Poisonings
 - d. Burns

e. Safety

1. Identify correct plan for action during fire emergencies

f. Measurements

1. Measure and record vital signs
2. Measure and record height and weight
3. Graph TPR and B/P

4. Utilize the metric system in health care calculations
5. Apply volume, length, and weight systems to health care situations

g. Employment Skills

1. Exhibit personal skills, such as attendance, time management, individual responsibility and teamwork
2. Maintain professional conduct and appearance
3. Complete a job application
4. Demonstrate interview skills
5. Write correspondence related to the employment process

h. Prepared Presentation

1. Each contestant will deliver a prepared five- to seven-minute presentation.
 - a. The purpose of the presentation is to present a topic related to basic health care (see Scope of the Contest a-g; see also Purpose) through demonstration, display and/or explanation.
 - b. A presentation will be compact, no larger than 30"x30"x30" and presented in five to seven minutes. A 4'x8' space and table will be available. Any visual aids (signs, charts, transparencies, slides, diagrams) are to be prepared by contestants. No pressurized aerosol cans of any kind will be permitted, and no compressed air, gas or flammable liquid may be used.
 - c. All employers' names and manufacturers' trade names must be covered or removed.
 - d. The demonstration will neither promote nor advertise any commercial organization or product.
 - e. The title should designate the exact nature of the presentation. Catchy titles are not appropriate to the scientific and educational purpose of the presentation.
 - f. Contestants must take all material for the presentation to the contestants' meeting prior to the contest.
 - g. The prepared presentation does not include another person acting as a patient.
2. All skills demonstrated will be based on nationally accepted accreditation and certification standards.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
BASIC HEALTH CARE SKILLS RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Task (determined by NTC)	150								
Presentation	25								
Written Test	25								
SUBTOTAL	200								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

DENTAL ASSISTING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of dental assisting.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA blue scrubs, white socks or white seamless hose and white leather health professional's work shoes. Shoes must be all-white leather (no canvas), completely enclosed (no open toe or open heel). Athletic style shoes that meet the aforementioned criteria are acceptable without logo. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with dental assisting as the occupational objective

Equipment and Materials

1. Supplied by the technical committee:
 - a. All instruments, equipment and materials required for the contest
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Watch with second hand
 - b. Pencil
 - c. Pen with black ink
 - d. Masks
 - e. Gloves
 - f. Safety glasses with side shield or goggles or face shield

Health Occupations Core

1. Academic Foundations
 - a. Apply knowledge of human/tooth structure and function to patient care situations.
 - b. Apply concepts of basic human needs to patient care.
 - c. Apply knowledge of nutrition.
 - d. Apply basic mathematical concepts.
2. Communication Skills— Core
 - a. Demonstrate oral, written and telephone communication skills with patients, families and staff.
 - b. Modify communication to meet patient needs.

- c. Spell, pronounce, define and utilize dental terms and abbreviations.
 - d. Observe, report and document pertinent patient data.
 - e. Demonstrate effective interpersonal relationships.
 - f. Be sensitive to multicultural and multilingual needs.
 - g. Provide for emotional support of patient during procedure.
3. Safety — Core
 - a. Report and/or correct safety hazards.
 - b. Apply principles of body mechanics.
 - c. Maintain equipment in proper working order.
 - d. Maintain a safe patient environment.
 - e. Follow emergency procedures.
 - f. Verify identity of patient.
 - g. Use precautions in the presence of ionizing radiation.
 - h. Manage hazardous materials.
4. Infection Control and Asepsis — Core
 - a. Perform correct handwashing technique.
 - b. Utilize appropriate personal protective equipment
 - c. Identify modes of transmission of pathogens.
 - d. Utilize standard precautions outlined by CDC, OSHA and ADA.
 - e. Apply principles of asepsis and disinfection.
5. Asepsis—Advanced
 - a. Don and remove sterile gloves and gown.
 - b. Create and maintain sterile field.
 - c. Apply principles of sterilization.
 - d. Assist with surgical procedures.
 - e. Clean, disinfect and sterilize surfaces, instruments, supplies and equipment utilizing appropriate methods.
 - f. Prepare and/or pack instruments for sterilization.
6. Ethical/Legal
 - a. Operate within the legal framework of liability in his/her scope of work.
 - b. Maintain confidentiality (HIPPA) in the dental care setting.
 - c. Recognize and report signs of neglect and abuse.
7. Employment Skills
 - a. Exhibit personal skills, such as attendance, time management, individual responsibility and teamwork.
 - b. Maintain professional conduct and appearance
 - c. Prepare correspondence related to the employment process.
 - d. Complete job application and résumé.
 - e. Demonstrate interview skills.
 - f. Prepare correspondence related to the employment process.

Scope of the Contest

Appearance Requirements:

A white shirt, with a crew-type neck, may be worn under the scrub top as long as the shirt is not visible from either the sleeve or the hem areas. Conservative hair style; long hair should be styled up and away from the face. Nails should be clean, short and without nail polish. Avoid artificial nails, which can harbor bacteria. Avoid heavy makeup and heavy body scents. No jewelry other than watch and, if applicable, wedding ring. Tattoos and piercing should not be visible.

1. The contest will consist of simulated dental office situations and demonstrations.
2. Contestants will demonstrate their ability to perform the procedures specified in the ninth edition of the *Task Analysis for Dental Assisting National Board Inc. (DANB) Examinations*. A copy of the standards may be purchased from:
DANB
676 N. St. Clair, Suite 1880
Chicago, Ill. 60611
Phone: 1-800-FOR-DANB
Web: www.danb.org.
3. Contestants will be rated on personal appearance, the degree of work skills and speed used in the performance of the assigned task. The use of safety measures and the degree of effective personal interaction with the patient will also be rated, when appropriate.
4. All skills demonstrated will be selected from the latest edition of *Modern Dental Assisting* (Torres and Ehrlich), Elsevier Publishing. Contact your area representative for a desk copy of the textbook and student workbook by calling 1-800-325-7680.
5. The skills included in the contest will be selected from the following competency categories and may involve total procedures or tasks that are a part of the procedures. The contest may include, *but is not limited to*, the specific examples given in each category.
 - a. Patient Assessment Procedures
 1. Taking vital signs
 2. Assisting with medical emergencies
 3. Perform CPR
 - b. Preventive Procedures
 1. Instruct use of dental floss
 2. Instruct bass toothbrushing
 3. Identify food groups
 4. Assist with sealants
 5. Assist with prophylaxis
 6. Appliance use and care
 - c. Infection Control
 1. Use universal precautions
 2. Prepare instruments for disinfection/sterilization
 3. Operate ultrasonic
 4. Disinfect/sterilize instruments

- d. Chairside Assisting
 1. Seat patient
 2. Operator positions
 3. Tray setups
 4. Pass instruments
 5. Use of high volume evacuation
 6. Instrument identification
 7. Assist with area isolation
 8. Assist with operative treatment
 9. Assist with specialty treatment
- e. Dental Materials
 1. Mix gypsum
 2. Mix cements
 3. Mix bases
 4. Mix restorative materials
 5. Prepare impression materials
- f. Laboratory Procedures
 1. Pour models
 2. Construct temporary
 3. Complete articulation
 4. Construct mouthguard
 5. Construct bleaching trays
- g. Radiology Procedures
 1. Radiation safety
 2. Identify films and faults
 3. Mount films
 4. Process films
- h. Office Management Procedures
 1. Complete patient registration
 2. Complete patient chart
 3. Complete charting (universal)
 4. Schedule appointments
 5. Operate computer
 6. Complete insurance forms
 7. Complete patient account
- i. Employability
 1. Prepare résumé
 2. Complete job application
 3. Interview for a job

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
DENTAL ASSISTING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Appearance	5								
Infection Control	15								
Chairside Assisting	50								
Instrument I.D.	10								
Dental Materials	15								
Radiology	20								
Dental Laboratory	20								
Office Management	10								
Written Test	15								
Employability	10								
SUBTOTAL	165								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

HEALTH KNOWLEDGE BOWL



Purpose

To test the knowledge of a team of contestants preparing for employment in the health occupations field and to recognize outstanding students for excellence and professionalism.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer or windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to SkillsUSA members enrolled in a program with a health career as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. A small number of sample questions from each category will be available from the SkillsUSA national headquarters, your state association director, or the SkillsUSA web site. These questions and answers are designed to give you examples of the types of questions that will be developed for the actual contest, not as a study guide.
 - b. Calculator
2. Supplied by the team:
 - a. 60 sheets of 8½" X 11" white blank paper.
 - b. 8½" X 11" blank colored paper for use as scrap paper.
 - c. Pens, pencils, and black marking pens (four-six of each)

Note: No notes or reference materials of any kind will be permitted in the contest room.

Scope of the Contest

Core Standards from the National Health Care Core Skill Standard make up the categories from which questions will be developed for the HKB contest.

1. Core Standard 1: Academic Foundations (6 questions per Half)
 - a. Human structure and function
 - b. Diseases and disorders
2. Core Standard 2: Communication (3 questions per Half)
 - a. Oral communication skills
 - b. Written communication skills
3. Core Standard 3: Systems (1 Question per Half) (This category will utilize the "Health" section of *USA Today* for questions pertaining to current events impacting health care such as cost, managed care, technology, an aging population, access to care, alternative therapies, and lifestyle/behavior changes)
 - a. Systems theory
 - b. Health care delivery system
 - c. Health care delivery system results
 - d. System change
4. Core Standard 4: Employability Skills (3 questions per Half)
 - a. Key employability skills
 - b. Interpersonal communications
 - c. Personal growth and development
 - d. Career decision-making
5. Core Standard 5: Legal Responsibility (2 questions per Half)
 - a. Legal implications
 - b. Legal practices
6. Core Standard 6: Ethics (2 questions per Half)
 - a. Legal and ethical Boundaries
 - b. Ethical practice
 - c. Cultural, social, and ethnic diversity
7. Core Standard 7: Safety Practices (3 questions per Half)
 - a. Infection control
 - b. Personal safety
 - c. Environmental safety
 - d. Common safety hazards
 - e. Emergency procedures and protocols
8. Core Standard 8: Teamwork (2 questions per Half)
 - a. Health care teams
 - b. Team member participation
9. Core Standard 9: Health Maintenance Practices (2 questions per Half)
 - a. Healthy behaviors

References

The following are resource materials from which high school questions will be written.

1. *USA Today* – Current school year's issues
2. *Diversified Health Occupations*, current edition, by Louise Simmers, published by Delmar
3. *Health Careers Today*, current edition, by Judith Gerdin, published by Mosby Lifeline
4. *Health Care Science Technology: Career Foundations*, current edition by Kathryn A. Booth, published by Glencoe

Note: Postsecondary questions will be drawn from textbooks commonly used by LPN schools and programs at the certificate and associate degree level (e.g., surgical technology, dental assisting, medical assisting, etc.)

General Regulations

1. A state may enter one high school team and one college/postsecondary team comprised of four registered members each. The team may perform with three members without penalty in the event a member fails to show up or is forced to withdraw within five days of the competition.
2. The contest will be four quarters consisting of 12 questions per quarter.
3. A break will be announced at the end of each quarter. At no time will a contestant be allowed to talk with an advisor or spectator during the contest.

Scoring

1. Each team will begin each quarter with 10 points.
2. A team may bid up to one-half of the team's total points for that quarter.
3. A team may always bid five points, even if their score falls below 10 points.
4. A penalty for bids not conforming to bid criteria will be a zero bid.
5. Each team's bid and score (by quarter) will be visible to all contestants to assist in bidding strategies.
6. Contestants may use calculators provided by the technical committee to assist with bid determination, checking the official score, or medical math questions.
7. Score discrepancies must be addressed by the team captain prior to the next question.
8. A written test will be administered during the contestant briefing. This test will be completed as a team. The score from the written test will not be announced but will be added to the final total score.
9. The winning team is that team which has accumulated the highest total points. (Total score, plus written test score, less clothing penalties.)
10. In the event of a tie, the tie will be broken as follows:
First Tie-breaker: The compiled score of team members on the Professional Development Program (PDP) Test.
Second Tie-breaker: The team with the highest written test score.

Marking Bids and Answers

1. The bid is to be written with a black marking pen in the corner of an 8.5" X 11" sheet of white paper.
2. The answer will be written on the same sheet of paper as the bid. Both must be written legibly and large enough to be seen by the floor judge.

3. Any team member may write the bid or answer. He/she must complete writing the answer and then stand before time is called. No team member may stand before the writer has completed the bid or answer.
4. If the team member is not standing prior to the end of the allotted time, the team will receive a "0" bid or the answer will be considered incorrect.
5. After the category has been announced, the team will have 10 seconds to determine a bid. A five-second warning will be given before the time is up. The captain must be standing before time is called.
6. The question will be read once and visually displayed. The team will have 30 seconds after the question has been read to determine and write the answer. A five-second warning will be given before time is up. A team member must be standing with the answer before time is called. (The contest chair has the discretion to increase the time allotted to determine and write an answer if he/she determines it would be necessary.)
7. Teams may discuss bids and answers among themselves. Contestants are cautioned to whisper to each other so as to not be overheard by other teams.
8. Answers must be spelled correctly; spelling errors will be counted as an incorrect response.
9. The team member will display the answer when directed to do so by the judge. The reader will announce the correct answer. The floor judge will check the team answer. If correct, the scorer will add the bid to the team's total quarter score. If incorrect, the scorer will subtract the bid from the team's total quarter score.

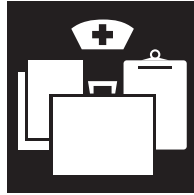
Judging

1. The judging team will make all decisions regarding score, correct answers, and rule violations. The decision of the judging team will be final and will be announced by the contest chair. Disqualification may result upon repeated rule violations.
2. A team who wishes to challenge a score or an answer must address the issue with the floor judge before the next question begins.
3. It is the responsibility of all team members and advisors to know the rules of the contest.
4. Resource books used to develop the contest questions will be provided for the judges reference if needed.

Spectators

1. Spectators may observe the contest from a designated area. Spectators may not communicate in any manner with any participants. Anyone displaying inappropriate sportsmanship will be required to leave the premises.

HEALTH OCCUPATIONS PROFESSIONAL PORTFOLIO



Purpose

To recognize students for their successful development of a professional portfolio and to evaluate the ability of an individual to present himself or herself to an employer using effective communication skills.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer or windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in a health occupations program.

Scope of the Contest

The contest will consist of two parts: a portfolio notebook and a live presentation by the contestant.

1. Notebook

Each contestant is required to submit an official SkillsUSA three-ring, 1-inch loose-leaf binder (available from the SkillsUSA Supply Service Catalog; the phone number is 1-800-324-5996). Photographs, news articles, illustrations and other informative material may be included to support and enhance written evidence of the contestant's participations in activities as described in the notebook. Pages must be limited to 25 (50 surfaces).

Notebook must include the following, presented in the order given:

- a. Title Page—include name of contestant, name of school, grade, training program and a picture of contestant.

- b. Table of Contents with page numbers
- c. Components of an Employment Portfolio

Section 1 — Résumé and Career Objectives

Prepare a current résumé. The student should include a written statement, describing his or her career objective and plans to achieve that objective and competencies that have been mastered.

(See Level 3.1 of the Professional Development Program for assistance in developing your résumé)

Section 2—References

Letters of references from teachers, mentors, supervisors, employers or others who can verify the student's skill ability. *(limit of three references)*

Section 3 — Awards and Recognition

Include copies of certificates, documentation of leadership activities, news articles and supportive material to serve as proof of the student's achievements. Reflect the highest level of achievement.

Section 4 — Work Sample Documentation

Summary of work site experiences pertaining to health occupations. Students should distinguish project documentation that is a result of school-based learning versus work-based learning. Work experience can be supported with photographs as appropriate.

Section 5 — Community Service

List of activities conducted that provided a benefit to the community. This section should demonstrate excellence and professionalism in the area of community service.

Section 6 — Membership and Affiliations

List of organizations and community groups in which the student is actively involved.

2. Presentation

Students should be prepared to make a five- to seven-minute oral presentation on their portfolio to the judges. Contestants should anticipate answering questions from the judges. Students are strongly encouraged to utilize current multimedia technology. This could include (but is not limited to) video, audio or computer-generated presentations in software such as PowerPoint. Contestants will be responsible for providing any necessary audiovisual presentation equipment.

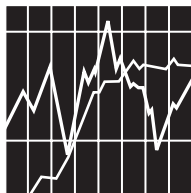
3. Judging

Notebooks will be submitted on Tuesday of the National Leadership and Skills Conference. The notebooks will be returned to the contestant at the end of the live presentation. The judges will be permitted to have the notebooks during the presentation. Contestants must report to the contest area at the designated time with all equipment necessary for their presentation. Students will be required to stay until they are dismissed by the judges.

SKILLSUSA CHAMPIONSHIPS
HEALTH OCCUPATIONS PROFESSIONAL PORTFOLIO RATING SHEET

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Notebook Overall appearance and organization (title page, table of contents)	10								
Section 1—Résumé & career objectives	30								
Section 2—References	10								
Section 3—Awards and recognition	10								
Section 4—Work sample documentation	20								
Section 5—Community service	10								
Section 6—Membership and affiliations	10								
Presentation Introduction	10								
Organization	10								
Content	20								
Integration of Technology	10								
Responses to Questions	20								
Visual Presentation	10								
Oral Presentation—voice, poise, platform behavior	10								
Closing	10								
SUBTOTAL	200								
Written Test									
Time Penalty (minus 5 points for each 30 seconds under 5 or over 7 minutes)									
Clothing Penalty (minus 0 to 5 percent of total points)									
TOTAL POINTS									

MEDICAL ASSISTING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of medical assisting.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official blue scrubs, white socks or clear seamless hose and white leather health professional's work shoes. Shoes must be all-white leather (no canvas), completely enclosed (no open toe or open heel). Athletic style shoes that meet the aforementioned criteria are acceptable. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with medical assisting as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All instruments, equipment and materials required for the contest
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Watch
 - b. Pen (black ink)
 - c. Safety glasses/shield

Health Occupations Core

1. Academic Foundations
 - a. Apply knowledge of human structure and function to client care situations.
 - b. Apply concepts of basic human needs to client care.
 - c. Apply knowledge of nutrition.
 - d. Apply basic mathematical concepts.
2. Communication Skills—Core
 - a. Demonstrate oral, written and telephone communication skills with patients, families and staff.
 - b. Modify communication to meet client needs.
 - c. Spell, pronounce, define and utilize medical terms and abbreviations.
 - d. Observe, report and document pertinent patient data.

- e. Demonstrate effective interpersonal relationships.
 - f. Be sensitive to multicultural and multilingual needs.
 - g. Provide for emotional support of client during procedure/treatment.
3. Safety—Core
 - a. Report and/or correct safety hazards.
 - b. Apply principles of body mechanics.
 - c. Maintain equipment in proper working order.
 - d. Maintain a safe client environment.
 - e. Follow emergency procedures.
 - f. Verify identity of client.
 - g. Use precautions in the presence of ionizing radiation.
 - h. Manage hazardous materials.
4. Infection Control and Asepsis—Core
 - a. Perform correct handwashing technique.
 - b. Utilize appropriate personal protective equipment.
 - c. Identify at-risk behaviors and modes of transmission of pathogens.
 - d. Utilize standard precautions outlined by the CDC.
 - e. Apply principles of medical asepsis.
 - f. Clean and restock client environment.
 - g. Apply principles of disinfection.
5. Asepsis—Advanced
 - a. Create and maintain sterile field.
 - b. Don and remove sterile gloves/gown.
 - c. Assist with minor surgical procedures.
 - d. Apply principles of sterilization.
 - e. Clean, disinfect and sterilize surfaces, instruments, supplies and equipment utilizing appropriate methods.
 - f. Prepare and/or package equipment for sterilization.
6. Ethical/Legal
 - a. Operate within the legal framework of liability in his/her scope of work.
 - b. Maintain confidentiality in the health care setting.
 - c. Explain client rights.
 - d. Recognize and report signs of neglect and abuse.
7. Employment Skills
 - a. Exhibit personal skills, such as attendance, time management, individual responsibility and teamwork.
 - b. Maintain professional conduct and appearance.
 - c. Complete job application and résumé.
 - d. Demonstrate interview skills.
 - e. Prepare correspondence related to the employment process.

Scope of the Contest

1. The contest will consist of simulated office situations and demonstrations.
2. Contestants will demonstrate their ability to perform procedures or skills selected from the following list of competencies as determined by the SkillsUSA Championships Health Occupations Technical Committee:

a. Perform General Office Procedures

1. Place and receive telephone calls
2. Arrange for client admission to hospital
3. Arrange physician's travel accommodations
4. Schedule client appointments
5. Complete history and assessment for client
6. Explain doctor's fee and office policies
7. File letters, diagnostic reports and progress notes in client's records.
8. Gather data for necessary reports regarding referrals to other doctors
9. Prepare medical file for a new client
10. Maintain appointment book and reminder system.
11. Make referral appointments for client
12. Prepare release form and obtain the necessary signatures
13. Process mail
14. Prepare medical records for daily appointment schedule
15. Receive clients and visitors
16. Schedule patient for outpatient diagnostic tests
17. Transcribe letters from tape recorder or transcriber
18. Prepare statements for mailing
19. Prepare correspondence from rough draft
20. Prepare medical records
21. ICD-9CM coding
22. CPT coding
23. Apply computer concepts to office practices
24. Plan and organize daily office activities
25. Update the outside agency file
26. Update inventory list of office supplies and equipment
27. Prepare purchase requisitions
28. Complete peg board
29. Operate calculator

b. Perform General Accounting Procedures

1. Collect and post payments
2. Collect delinquent bills
3. Maintain a file of unpaid accounts
4. Maintain a petty cash fund
5. Make financial arrangements with clients

6. Prepare bank deposit slips
7. Process charge slips
8. Prepare checks for doctor's signature
9. Prepare payroll
10. Reconcile bank statements
11. Reconcile cash count and receipts
12. Review invoices for validity and accuracy

c. Complete Government and Insurance Forms and Other Financial Reports

1. Complete insurance forms for filing assigned insurance claims
2. Complete insurance forms for client reimbursement
3. Complete Medicare forms
4. Complete worker's compensation forms
5. Complete Medicaid forms

d. Perform General Laboratory Procedures

1. Assist with the collection of clean catch or sterile urine specimens
2. Assist with the collection of microorganism smear
3. Assist with the collection of Pap smear
4. Prepare urine specimen for microscopic examination
5. Collect eye, nose and throat specimens for culture and sensitivity
6. Assist with the collection of a random voided urine specimen
7. Assess and record color, gross appearance, and odor of urine specimen
8. Perform cholesterol tests
9. Perform blood sugar screening test
10. Perform mono screening tests
11. Perform routine biochemical urine tests
12. Perform urine pregnancy test
13. Perform urine specific gravity tests
14. Prepare requisitions for test outside of office
15. Prepare specimens for shipping
16. Test stool specimens for occult blood
17. Test stool specimens for occult blood using the bensidine filter paper test

e. Perform Hematology Procedures

1. Obtain a capillary blood specimen
2. Perform hematocrit test
3. Perform hemoglobin test
4. Perform venipuncture using vacuum setup*
5. Separate plasma or serum from cells

* High school contestants will not participate in the venipuncture skills, but may be required to identify equipment and supplies used in this procedure.

f. Perform Electrocardiogram (EKG)

Procedures

1. Perform EKG test
2. Mount EKG graphs
3. Clean EKG equipment after use

g. Pharmaceutical Principles and Medication Administration

1. Monitor supply of controlled substances
2. Identify commonly administered drugs, their uses and effects.
3. Use correct pharmaceutical abbreviations and terminology
4. Identify various methods and routes of drug administration
5. Five rights

h. Perform Clinical Office Procedures

1. Assist with minor surgery
 2. Assist with dressing change
 3. Create and maintain a sterile field
 4. Assist with physical examination
 5. Assist with biopsy procedure
 6. Perform visual and auditory acuity tests
 7. Position and drape patient
 8. Apply elastic bandage
 9. Apply roller bandage
 10. Apply triangular bandage
 11. Apply tubular bandage
 12. Demonstrate knowledge and use of pressure points to control bleeding
 13. Provide first aid for syncope
 14. Prepare for catheterization
 15. Prepare patient for minor surgery
 16. Prepare room and equipment for examination, procedures, and minor surgery
 17. Measure and record oral, rectal, axillary and aural temperature
 18. Measure and record pulse
 19. Measure and record respiration
 20. Measure and record blood pressure
 21. Perform hot and cold therapies
 22. Perform basic adult, infant and child CPR
 23. Identify medical instruments and equipment
 24. Measure height and weight
 25. Chart pertinent observations/information
 26. Demonstrate emergency measures for choking
3. All skills demonstrated will be based on nationally accepted accreditation and certification standards recognized by the American Medical Association.
 4. Contestants, as part of the demonstration, should voluntarily express pertinent information.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
MEDICAL ASSISTING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Identification of Instruments and Anatomy	10								
Personal Interview	5								
General Office Skills	15								
Communication Skills	5								
Personal Appearance	5								
Assisting Procedures and Techniques	95								
Written Test	15								
SUBTOTAL	150								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

NURSE ASSISTING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of nurse assisting.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official blue scrubs, white socks or clear seamless hose and white leather health professional's work shoes. Shoes must be all-white leather (no canvas), completely enclosed (no open toe or open heel). Athletic style shoes that meet the aforementioned criteria are acceptable. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with nurse assisting as the occupational objective.

EQUIPMENT AND MATERIALS

1. Supplied by the technical committee:
 - a. All instruments, equipment and materials required for the contest.
 - b. All necessary information and furnishings for judges and technical committee.
2. Supplied by the contestant:
 - a. Watch
 - b. Pen (black ink)
 - c. Safety glasses/shield
 - c. Three (3) copies of your one-page, typewritten résumé

Health Occupations Core

1. Academic Foundations
 - a. Apply knowledge of human structure and function to client care situations.
 - b. Apply concepts of basic human needs to client care.
 - c. Apply knowledge of nutrition.
 - d. Apply basic mathematical concepts.
2. Communication Skills—Core
 - a. Demonstrate oral, written and telephone communication skills with patients, families and staff.
 - b. Modify communication to meet client needs.
 - c. Spell, pronounce, define and utilize medical terms and abbreviations.

- d. Observe, report, and document pertinent patient data.
 - e. Demonstrate effective interpersonal relationships.
 - f. Be sensitive to multicultural and multilingual needs.
 - g. Provide for emotional support of client during procedure/treatment.
3. Safety—Core
 - a. Report and/or correct safety hazards.
 - b. Apply principles of body mechanics.
 - c. Maintain equipment in proper working order.
 - d. Maintain a safe client environment.
 - e. Follow emergency procedures.
 - f. Verify identity of client.
 - g. Use precautions in the presence of ionizing radiation.
 - h. Manage hazardous materials.
4. Infection Control and Asepsis—Core
 - a. Perform correct hand washing technique.
 - b. Utilize appropriate personal protective equipment.
 - c. Identify at-risk behaviors and modes of transmission of pathogens.
 - d. Utilize standard precautions outlined by the CDC.
 - e. Apply principles of medical asepsis.
 - f. Clean and restock client environment.
 - g. Apply principles of disinfection.
5. Asepsis—Advanced
 - a. Create and maintain sterile field.
 - b. Don and remove sterile gloves/gown.
 - c. Assist with minor surgical procedures.
 - d. Apply principles of sterilization.
 - e. Clean, disinfect and sterilize surfaces, instruments, supplies and equipment utilizing appropriate methods.
 - f. Prepare and/or package equipment for sterilization.
6. Ethical/Legal
 - a. Operate within the legal framework of liability in his/her scope of work.
 - b. Maintain confidentiality in the health care setting.
 - c. Explain client rights.
 - d. Recognize and report signs of neglect and abuse.
7. Employment Skills
 - a. Exhibit personal skills, such as attendance, time management, individual responsibility and teamwork.
 - b. Maintain professional conduct and appearance.
 - c. Complete job application and résumé.
 - d. Demonstrate interview skills.
 - e. Prepare correspondence related to the employment process.

Scope of Contest

1. Contestants will demonstrate their ability to perform procedures or skills selected from the following list of competencies as determined by the National SkillsUSA Health Occupations Technical Committee. Committee membership includes Liberty Hospital, Liberty, Mo. All skills must be performed using safety precautions and correct body mechanics.

a. Provide for personal needs of clients

1. Assist in dressing and undressing
2. Provide or assist with bath
3. Provide hair care
4. Provide back rub
5. Assist with shaving
6. Provide incontinent care
7. Provide nail care
8. Provide skin care
9. Provide oral hygiene
10. Demonstrate denture care
11. Demonstrate use of gait belt
12. Assist client to stand
13. Transfer to and from wheelchair
14. Assist with ambulation
15. Transfer between stretcher and bed using three-person lift
16. Transport by wheel chair or stretcher
17. Transfer using mechanical lift
18. Assist in putting on or removing braces
19. Apply heel and elbow protectors
20. Assist with crutch walking
21. Assist with walker
22. Set up supplies and prepare client for examination
23. Turn and position client

b. Assist with nutrition and elimination

1. Identify general/special diets
2. Assist client with meal tray
3. Feed client
4. Measure and record food/fluid intake
5. Distribute drinking water and/or nourishments
6. Assist client to bathroom or commode
7. Assist with bedpan
8. Assist with urinal
9. Observe, measure, and record urine output
10. Measure and record output
11. Observe and record fecal output
12. Assist with bladder and/or bowel training program

c. Assist with treatments and procedures

1. Prepare hot and cold applications
2. Prepare and assist with soaks and sitzbaths
3. Apply elastic stockings
4. Assist with, or provide range-of-motion exercises

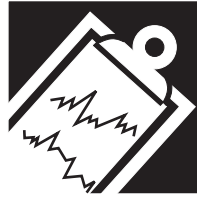
5. Assist with dangling
 6. Assist with turning and deep breathing
 7. Log roll client
 8. Apply restraints
 9. Provide perineal care
 10. Collect a routine urine specimen
 11. Collect a clean catch urine specimen
 12. Collect a 24-hour urine specimen
 13. Connect an indwelling catheter to leg bag
 14. Collect a sputum specimen
 15. Collect a stool specimen
 16. Provide colostomy care
 17. Prepare and give an enema
 18. Measure and record radial or apical pulse
 19. Identify pulse sites
 20. Measure and record temperatures using appropriate instruments
 21. Measure and record respiration
 22. Measure and record height and weight
 23. Measure and record blood pressure
 24. Perform adult, child, and infant CPR
2. All skills demonstrated will be based on nationally accepted accreditation and certification standards recognized by the American Medical Association.
 3. Contestants, as part of the demonstration, should voluntarily express pertinent information.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
NURSE ASSISTING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Personal Appearance	10								
Organization/Plan of Work: Equipment, order, convenience	10								
Attitude: Toward patient, toward supervisors, toward task	10								
Communication Skills: Facial expression, ability to listen, ability to lower patient anxiety, ability to interpret and implement oral and written instructions, accuracy of oral and written terminology	15								
Nursing Procedures As Assigned: Safety measures, procedure knowledge and implementation, accuracy, speed, completeness, comfort, understanding of involved principles	90								
Written Test	15								
SUBTOTAL	150								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

PRACTICAL NURSING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of practical nursing.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official blue scrubs, white socks or clear seamless hose and white leather health professional's work shoes. Shoes must be all-white leather (no canvas), completely enclosed (no open toe or open heel). Athletic style shoes that meet the aforementioned criteria are acceptable. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with practical nursing as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All instruments, equipment and materials required for the contest
 - b. All necessary information and furnishings for judges and technical committees
2. Supplied by the contestant:
 - a. A watch with a second hand
 - b. A pen with black ink
 - c. Stethoscope
 - d. Scissors for removing bandages
 - e. Three (3) copies of your one-page, typewritten résumé

Health Occupations Core

1. Academic Foundations
 - a. Apply knowledge of human structure and function to client care situations.
 - b. Apply concepts of basic human needs to client care.
 - c. Apply knowledge of nutrition.
 - d. Apply basic mathematical concepts.
2. Communication Skills — Core
 - a. Demonstrate oral, written and telephone communication skills with patients, families and staff.
 - b. Modify communication to meet client needs.
 - c. Spell, pronounce, define and utilize medical terms and abbreviations.

- d. Observe, report and document pertinent patient data.
 - e. Demonstrate effective interpersonal relationships.
 - f. Be sensitive to multicultural and multilingual needs.
 - g. Provide for emotional support of client during procedure/treatment.
3. Safety — Core
 - a. Report and/or correct safety hazards.
 - b. Apply principles of body mechanics.
 - c. Maintain equipment in proper working order.
 - d. Maintain a safe client environment.
 - e. Follow emergency procedures.
 - f. Verify identity of client.
 - g. Use precautions in the presence of ionizing radiation.
 - h. Manage hazardous materials.
4. Infection Control and Asepsis — Core
 - a. Perform correct handwashing technique.
 - b. Utilize appropriate personal protective equipment.
 - c. Identify at-risk behaviors and modes of transmission of pathogens.
 - d. Utilize standard precautions outlined by the CDC.
 - e. Apply principles of medical asepsis.
 - f. Clean and restock client environment.
 - g. Apply principles of disinfection.
5. Asepsis — Advanced
 - a. Create and maintain sterile field.
 - b. Don and remove sterile gloves/gown.
 - c. Assist with minor surgical procedures.
 - d. Apply principles of sterilization.
 - e. Clean, disinfect and sterilize surfaces, instruments, supplies and equipment utilizing appropriate methods.
 - f. Prepare and/or package equipment for sterilization.
6. Ethical/Legal
 - a. Operate within the legal framework of liability in his/her scope of work.
 - b. Maintain confidentiality in the health care setting.
 - c. Explain client rights.
 - d. Recognize and report signs of neglect and abuse.
7. Employment Skills
 - a. Exhibit personal skills, such as attendance, time management, individual responsibility and teamwork.
 - b. Maintain professional conduct and appearance.
 - c. Complete job application and résumé.
 - d. Demonstrate interview skills.
 - e. Prepare correspondence related to the employment process.

Scope of the Contest

1. Contestants will demonstrate their ability to perform procedures or skills selected from the following list of competencies as determined by the SkillsUSA Health Occupations Technical Committee. Committee membership includes Lees Summit Hospital, Lees Summit, Mo., and the U.S. Department of Labor.

a. Coordinated Care

1. Assist staff in planning responses to a client's complaints or demands
2. Instruct staff on the need for client confidentiality
3. Use resources to learn more about the culture of a client
4. Plan patient care assignments for staff
5. Teach staff about safety precautions for special equipment
6. Collaborate with other health-care providers to help clients adopt healthful roles after illness
7. Evaluate the effectiveness of recreational therapy
8. Intervene when client's dignity or privacy is being violated
9. Determine if client needs to be referred for a hearing, vision or speech problem
10. Participate in a multidisciplinary team conference in planning care
11. Ask physician if medical treatment can be modified to meet client's special needs

b. Quality Assurance

1. Evaluate a staff member's understanding of infection control procedures
2. Look for source of repeated infection
3. Document treatment errors or accidents
4. Identify clients who require isolation
5. Develop standards of care for clients with particular problems
6. Intervene in situations involving unsafe or inadequate care

c. Goal-Oriented Care

1. Develop plans for a client's discharge or transfer
2. Alter a care plan to accommodate a client's values, customs or habits
3. Plan alternative methods of communication for a client with a hearing, speech or vision problem
4. Write a nursing care plan
5. Give a report to the nurses on the next shift
6. Check accuracy of orders and client data
7. Use reference works to check on expected effects of therapy
8. Ask clients about allergies
9. Refer to research literature in planning care

d. Environmental Safety

1. Arrange a room to promote client safety
2. Analyze environmental hazards in the community, school or workplace
3. Plan measures to reduce sources of discomfort in a client's environment
4. Plan safety needs of a client with a perceptual disorder
5. Carry out radiation protection measures
6. Check that electronic equipment is working properly
7. Identify clients who need restraints
8. Verify the identity of a client

e. Preparation for Treatments and Procedures

1. Prepare a client for a diagnostic test
2. Verify that a client or family has information needed for informed consent
3. Explain to a client the expected outcomes of treatment or therapy
4. Check that a client is emotionally ready for surgery or other obtrusive procedure
5. Check that a client is physically prepared for surgery or delivery

f. Safe and Effective Treatments and Procedures

1. Set up a sterile field
2. Maintain asepsis for a client at risk
3. Check the functioning of suction equipment
4. Pass instruments during a surgical procedure
5. Sterilize equipment
6. Label and prepare specimens for transmission to the laboratory
7. Obtain specimens from clients for laboratory tests
8. Stay with a client to promote safety and reduce fear
9. Monitor a client's status during surgery or other obtrusive procedure

g. Physiological Adaptation

1. Perform cardiopulmonary resuscitation (CPR)
2. Report changes in client's level of consciousness
3. Notify a physician about significant changes in a client's condition
4. Provide tracheostomy care
5. Provide emergency care for a wound
6. Determine if a client with chest trauma needs emergency care
7. Administer oxygen
8. Suction a client's respiratory tract
9. Manage a medical emergency until a physician arrives

h. Reduction of Risk Potential

1. Check with a physician about contraindicated medication or treatment

2. Assess respiratory status
 3. Withhold medication if there is adverse reaction
 4. Assess cardiovascular status
 5. Recommend a change in drug therapy based upon a client's behavior
 6. Position a client who has a spinal cord injury
 7. Plan measures to prevent circulatory complications
 8. Observe clients for side effects of chemotherapy or radiation therapy
 9. Assess a client's tolerance for physical activity
 10. Check for interactions among client's drugs, foods and fluids
 11. Administer oral medications
 12. Plan nursing measures to promote sleep
 13. Schedule the administration of medications
 14. Take measures to prevent respiratory complications
 15. Administer intramuscular or subcutaneous medications
 16. Plan measures to prevent neurological complications
 17. Modify a client's care based on the results of diagnostic tests
 18. Check bowel sounds
 19. Assess a client's nutrition and hydration status
 20. Transcribe a physician's orders
 21. Assess a client's neurosensory functions
 22. Take measures to counteract the effects of poisons or the side effects of medications
 23. Check for complications due to a cast
 24. Check a client for bleeding
 25. Assess the progress of wound healing
 26. Suggest revising or discontinuing a medication order
 27. Plan measures to maintain skin integrity
- i. Mobility**
1. Check a client for complications due to immobility
 2. Check that traction devices are set up properly
 3. Do passive range of motion exercises for a client
 4. Help a client in and out of bed
 5. Evaluate a client's use of crutches or other walking aids
- j. Comfort**
1. Plan measure to minimize anticipated pain
 2. Teach a client pain management techniques
3. Evaluate a client's response to nursing measures for controlling pain or discomfort
 4. Assess the need for administration of PRN medications
- k. Provision of Basic Care**
1. Measure vital signs
 2. Modify food and fluid intake to promote fluid and electrolyte balance
 3. Assist a client with personal hygiene
 4. Position or turn a client
 5. Weigh a client
 6. Help a client eat
 7. Schedule activities to provide opportunities for clients to rest
 8. Give a back rub
 9. Give a tube feeding
 10. Test urine specimen
 11. Give an enema
 12. Record intake and output
 13. Plan measures to improve a client's appetite
 14. Give perineal care
 15. Apply a dressing to a wound
 16. Record the characteristics of tube drainage
 17. Assess the patency of drainage and decompression tubes
 18. Insert an indwelling urinary catheter
- l. Psychosocial Adaptation**
1. Check a client for signs and symptoms of alcohol/drug withdrawal
 2. Record client behaviors that indicate delusions or hallucinations
 3. Assess orientation to a person, place and time
 4. Teach a client early signs and symptoms of recurring depression
 5. Develop a plan to emphasize the strengths of a client with low self-esteem
 6. Teach the family of an emotionally disturbed client techniques for managing behavior
 7. Assess a client's potential for violence to self or others
 8. Assess the environment of a suicidal client for potential hazards
 9. Counsel suspected victims of abuse
 10. Counsel a client with a drug/alcohol problem
 11. Record baseline data for behavior modification program
 12. Plan measures to control or help a client to control disruptive behavior
- m. Coping/Adaptation**
1. Assess whether a client is getting adequate emotional support
 2. Encourage clients to talk about their fears

3. Record observations of behavior that indicate client's mood
4. Evaluate a client's learning of relaxation techniques
5. Help a client to deal with negative attitudes related to illness
6. Encourage clients to persist with therapy
7. Assess a client's adjustment to changes in body image
8. Assess the emotional adjustment of a client with a physical or emotional impairment
9. Assess a client's need for an increase or decrease in sensory stimulation
10. Plan measures to deal with client's anxiety due to pain or change in body function

n. Continued Growth and Development

1. Compare the physical development of a client to norms
2. Assess parents' understanding of normal growth and development
3. Check the skill of new parents at infant feeding
4. Teach parenting skills
5. Assess clients' attitudes toward various birth control measures
6. Assess new mothers for complications
7. Evaluate a client's understanding of risks to unborn children
8. Conduct a prenatal care session
9. Conduct a prenatal and fetal status during labor
10. Compare a client's behavioral development norms
11. Assess a newborn
12. Identify clients with problems related to sexuality or reproduction

o. Self-care

1. Refer a client to a self-help group
2. Analyze a client's ability for self-care
3. Teach clients about normal nutrition
4. Plan measures to help a client cope with anxiety about shortness of breath
5. Assess the need of clients for teaching about personal hygiene
6. Teach clients about self-administration of prescribed medications
7. Teach clients how to avoid infection
8. Evaluate a client's performance of breathing exercises
9. Plan a bowel or bladder retraining program
10. Counsel a client with urinary or bowel incontinence
11. Identify differences between clients' views about their conditions and the medical view
12. Evaluate a client's understanding of ostomy care

13. Plan counseling for a client who is trying to lose or gain weight
14. Teach a client how to do exercises
15. Prepare client teaching materials
16. Teach clients about the use of artificial devices that improve functioning
17. Help a client to do activities of daily living
18. Adapt a diet to special needs of a client
19. Assess low-income clients' ability to meet their nutritional needs
20. Teach clients with physical impairments how to care for themselves
21. Evaluate a clients' use of home remedies and over-the-counter drugs
22. Help clients choose recreational activities that fit their age and condition
23. Evaluate a client's compliance with prescribed therapy

p. Integrity of Support Systems

1. Assess the safety of a client's home environment
2. Assess a client's/family's understanding about the causes of illness
3. Arrange for spiritual support during transitions or crises
4. Support terminally ill clients and their families
5. Teach home-care givers about the client's therapy
6. Counsel the family of a client with a mental, social or physical handicap
7. Adjust visiting hours to meet a family's needs
8. Assess a family's emotional reaction to a client's chronic disorder
9. Evaluate the quality of home care
10. Assess patterns of family interactions
11. Help a client/family adjust to role changes due to illness, accident or developmental changes
12. Look for signs of burnout in family members giving home care

q. Prevention and Early Treatment of Disease

1. Administer an immunizing agent
2. Conduct screening sessions
3. Interpret skin tests for allergy or tuberculosis
2. All skills demonstrated will be based on nationally accepted accreditation and certification standards.
3. Contestants, as part of the demonstration, should voluntarily express pertinent information.
4. Situations or case studies may be presented to test the contestant's ability to make judgment decisions.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
PRACTICAL NURSING RATING SHEET**

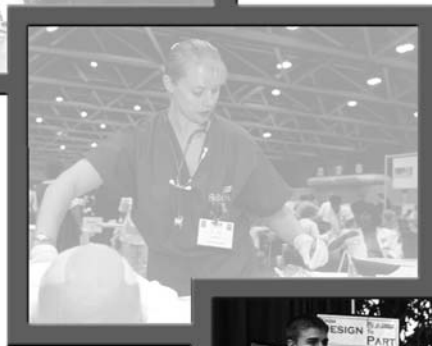
ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Professional Appearance	5								
Organization of Work	10								
Speed in Performing Tasks	5								
Personal Interaction with Patient	5								
Communication Skills	10								
Safety	5								
Written Test	10								
Technique and Skill in Completion of Tasks Assigned	50								
SUBTOTAL	100								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

SkillsUSA Championships

Technical Standards

2005–2007

Occupationally Related Contests



Customer Service
First Aid/CPR
Principles of Technology
Related Technical Math
Total Quality Management

CUSTOMER SERVICE



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of customer service.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer or windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to all active SkillsUSA members who meet the requirements as outlined below.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Workspace with table, chair, computer, telephone and customer reception area
 - b. Flip chart and markers
 - c. Telephone log, telephone directory
2. Supplied by the contestant:
 - a. Pencil and ball point pen
 - b. Paper (legal pad or spiral notebook)
 - c. Calculator (nonprogrammable)

Scope of the Contest

1. This contest will evaluate a student's proficiency in providing customer service. The contest will involve live, role-playing situations. Contestants will demonstrate their ability to perform customer service skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes Best Buy Co. Inc. and Pioneer Electronics Service Inc.

a. Communications

1. Demonstrate effective verbal communication
2. Demonstrate effective written communications
3. Demonstrate basic computer keyboarding and computer skills in Microsoft Word
4. Demonstrate good listening skills and show sincere interest
5. Speak in a clear, understandable manner

b. Business Etiquette

1. Demonstrate a confident handshake, proper greeting and personal introductions
2. Demonstrate confidence and positive personal image
3. Demonstrate good grooming in dress and personal hygiene
4. Make a formal introduction

c. Problem Solving

1. Demonstrate brainstorming techniques
2. Discuss implementation of solutions and costs involved with choosing a solution
3. Discuss the need for follow-up and modification
4. Demonstrate conflict resolution skills

d. Telephone Skills

1. Demonstrate ability to receive incoming calls
2. Demonstrate ability to handle basic customer service functions
3. Use basic phone functions:
 - Proper answering techniques
 - Transferring calls
 - Conferencing phone calls
 - Placing callers on hold
 - Terminating calls
 - Proper log-in and log-out procedures
4. Apply skills to role-play service applications. Contestants will be presented with live scenarios in which "customers" require assistance. This assistance may involve one or more of the following situations:
 - a request for information
 - a complaint
 - appointment scheduling
 - account inquiries and problems
 - product/service information requests
 - other customer issues/concerns

Each contestant will be given the same scenario(s) and the same amount of time. Total time will be 15 to 20 minutes. Contestants will be required to attend an orientation meeting where a written test will be given. At this meeting, contestants will draw for reporting times. Contestants must report to the contest area 30 minutes prior to their scheduled reporting time to check in with contest officials and receive final instructions. Contestants should expect to use all aspects of the skills listed in “Scope of the Contest.” A scenario will likely involve multiple situations occurring simultaneously (e.g., one customer may be engaged in a telephone conversation with the contestant while another customer is walking through the door for face-to-face interaction). Judges will serve in the role of the customer(s).

Additional resources are available online. “Contest Singles” include prior year’s contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
CUSTOMER SERVICE RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Greeting and introduction	60								
Voice (pitch, tempo, volume)	60								
Mechanics (diction, grammar, pronunciation)	60								
Politeness	60								
Appearance, grooming	60								
Personal deportment (poise, eye contact, mannerisms)	60								
Maturity in answers to questions	60								
Enthusiasm	60								
Personal salesmanship	60								
Presentation (self-confidence and persuasiveness)	60								
SUBTOTAL									
Written Test	100								
Clothing Penalty (minus 0 to 5 percent of total points)									
TOTAL POINTS	700								

FIRST AID/CPR



Purpose

To evaluate each contestant's ability to react positively in simulated situations demanding first aid intervention and to recognize excellence and professionalism in the career and technical student's first aid skills.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official blue scrubs, white socks or clear seamless hose and white leather health professional's work shoes. Shoes must be all-white leather (no canvas), completely enclosed (no open toe or open heel). Athletic style shoes that meet the aforementioned criteria are acceptable. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to all active SkillsUSA members who meet the requirements as outlined below.

Equipment and Materials

1. Supplied by the technical committee. Committee includes Honeywell Inc. FM&T and the Kansas City Fire Department.
 - a. All information needed to react to scenarios
 - b. Supplies commonly found in the situation(s) described
2. Supplied by the contestant:
 - a. Current CPR certification card from either the American Heart Association or American Red Cross and a current first aid certification card from either the American Red Cross or National Safety Council.

Observer Rule

Observers will be allowed to view the scenarios as the contestants participate provided there is space available. Talking or gesturing by the observers may result in disqualification of the contestant. Observers will not be permitted to communicate with contestants in the holding/assembly area.

Scope of the Contest

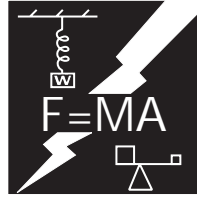
1. Contestants will demonstrate their ability to perform procedures or take appropriate action based on scenarios presented related to the following topic areas:
 - a. CPR for the adult, child, infant
 - b. Choking victim (Chest compressions will be the only accepted procedure for unconscious choking)
 - c. Bleeding
 - d. Seizures/convulsions
 - e. Drowning
 - f. Burns
 - g. Head, neck and back injuries
 - h. Dislocations and broken bones
 - i. Eye injuries
 - j. Diabetic reactions
 - k. Sprains
 - l. Wound care
 - m. Heart attacks
2. All skills demonstrated will be based on nationally accepted standards as identified by the American Red Cross for first aid emergencies, the American Heart Association for CPR and the National Safety Council.
3. Contestants will be required to present certification credentials from a nationally recognized source.
4. The written test will be made up of questions from the ARC test. The information is the same as American Heart.
5. Contestants will be tested on their oral communications skills. Maximum points will be 10 percent of total score.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
FIRST AID/CPR RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Scenario #1	40								
Scenario #2	40								
Scenario #3	40								
Scenario #4	40								
Scenario #5	40								
Scenario #6	40								
Written Test									
Oral Professional Assessment									
SUBTOTAL									
Clothing Penalty (minus 0 to 5 percent of total points)									
TOTAL									

PRINCIPLES OF TECHNOLOGY



Purpose

To evaluate each contestant's understanding of basic technical concepts/principles of the applied sciences and their ability to demonstrate and explain the concept/principle in action and application.

First, refer to General Regulations, Page 9.

Eligibility

The contest is open to all active SkillsUSA members either presently enrolled in or having completed a course in Principles of Technology. Contestants may enter from any course of study skill area.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer or windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Timekeeper
 - b. All necessary information and furnishings for the judges
 - c. 8'x12' space, a 30"x72" table and one 110-volt (15 amp) electrical outlet
2. Supplied by the contestant:
 - a. Contestants are required to bring five copies of the discussion paper to the contestant orientation meeting
 - b. All materials and equipment required for the demonstration
 - c. Contestants will exhibit their demonstration for public view for a limited time prior to and after their presentation time.
 - d. If electricity is required, contestant must have a 20-foot heavy-duty extension cord.

Scope of the Contest

Contest is intended to emphasize and address the "hows" and "whys" of applied physics. It is not a "how-to-do" contest. This contest includes a written technical paper and an oral technical presentation of a technical concept(s). The contestants are expected to demonstrate a thorough knowledge of the subject matter and to present a clear explanation of the topic through the use of examples, experiments, displays or practical operations. The following rules shall apply.

1. Contestants should prepare for the contest by developing the following abilities:
 - a. Demonstrate a thorough understanding of the subject matter.
 - b. Prepare a written discussion paper describing the principle(s) to be demonstrated, the theory and applications of the principle(s) and the materials required for the demonstration.
 - c. Present a technical demonstration of (a) chosen Principle(s) of Technology. Demonstrate the principle(s) in theory and/or application and leave the judges with a clear comprehension of the subject unit or sub-unit from Principles of Technology.
 - d. Answer questions and discuss the application of the principle(s) with the judges.
 - e. Speak in a clear, pleasing and understandable manner in front of a small group.
2. Any technical concept may be demonstrated, provided it is related to the Principles of Technology curriculum and incorporates basic principles of applied physics. If any hazardous or caustic materials are used, contestants must bring the associated Material Safety Data Sheet(s) (MSDS) to the contestant meeting and present five copies along with the five copies of the discussion paper for committee review.
3. The recitation of curriculum experiments is not, in and unto itself, sufficient to meet the requirements of the contest. Thorough research and indepth treatment of the subject matter will be required to comply with the requirements of the contest and to be competitive. Imagination and innovation will be expected by the judges.
4. Any visual aids (signs, charts, transparencies, slides, diagrams) are to be prepared by the contestants. Professionally prepared visual materials are not permitted. No sound device of any kind may be used to transmit or amplify audible words unless they are integral to the technical demonstration itself. No compressed air, gas or flammable liquid may be used.
5. The contestant will use his or her contestant number only and will not mention their school, city or state.

6. The Principles of Technology contest is an individual performance event. However, another student may assist to set up and/or to tear down the demonstration or as a model or a prop in the demonstration only.

7. **Discussion Paper**—The contestant will prepare and present to the contest chair five copies of a discussion paper in accordance with the following requirements.

- a. The discussion paper shall include subjects (such as background, history, development, explanation of the theory, applications, examples, methods of demonstration or benefits) to be addressed to the extent appropriate to present a clear explanation and demonstrate the contestant's understanding of the subject.
- b. The discussion paper must be typed, one-and-a-half- or double-spaced in 10- or 12-point type, must have 1-inch margins on all sides and must be four to eight pages long. Each page (except the cover) is to have a one-up page number at the bottom of the page.

The cover page will not be counted in the page count; however, all tables, graphs, pictures and illustrations will be counted. A cover page is required and must contain the following: "(current year) Principles of Technology Contest," and title of the technical demonstration and blanks for date, time and contestant number in the upper right-hand corner.

The contestant number shall be placed in the upper right-hand corner of each page before handing in the paper.

- c. The discussion paper shall conform to the following format:
 1. **Title**—short, descriptive title for the technical demonstration, centered near the top of the page.
 2. **Introduction**—a descriptive introduction to the technical demonstration principle(s) involved, objectives of the demonstration and reason(s) for the choice.
 3. **Discussion**—as a minimum, include a detailed discussion of the following subject areas:
 - a. The history and background of the principle(s) involved;
 - b. A description of the principle(s) involved and an explanation of the scientific theories embodied in the principle(s);
 - c. The technical demonstration to be given: how it will be conducted, what will be shown and how it relates to the subject matter;

- d. Practical applications of the principle (or principles) involved, including past, present and/or future;
- e. Provide examples of demonstrations of the principle(s) that are possible or in existence, but are not practical for the contest.
- f. Site the particular unit and/or sub-unit in Principles of Technology curriculum that is the basis for this technical demonstration.

4. **Summary**—present a concluding discussion of the principle(s) to be demonstrated, what the demonstration will have achieved, relevance to the practical world and any concluding remarks or conclusions.

- d. A bibliography shall be included with the discussion paper to properly credit reference sources. Footnotes are required in the text to credit specific references. All bibliography and footnote information shall be included at the end of the paper. Formatting is at the discretion of the contestant; however, complete credit and reference data is mandatory. Page numbers such as B1 will be used for the bibliography and footnote section but will not be included in the page count.

8. **Technical Demonstration**—The contestant shall prepare and present a technical demonstration to a panel of judges in accordance with the following requirements. The purpose of the technical demonstration is for the contestants to demonstrate thorough knowledge and awareness of the history, underlying theories, descriptive knowledge and applications of the chosen principle(s) in action and application. The contestants shall be prepared to present their demonstrations three times. Exhibition of the contestants' demonstrations to the general public will be required, but not scored.

9. Contestants will be allowed five minutes to set up the demonstration and five minutes to clear the demonstration room. Penalty: five points will be deducted for each 30 seconds or fraction thereof over the five-minute setup or clearing times.

Each presentation of the technical demonstration to the judges shall be at least 10 minutes in length and shall not exceed 15 minutes in length. Penalty: five points will be deducted for each 30 seconds or fraction thereof under 10 minutes or over 15 minutes in length. The timekeeper will indicate elapsed time of the demonstration at the 10-, 13- and 15-minute points.

Setup time will begin when the contestant indicates readiness to set up by handing to the lead judge a 3"x5" card containing the title of the

technical demonstration and the contestant number. The demonstration time will begin when the contestant indicates readiness and will stop when the contestant indicates that the technical demonstration has ended. The tear-down time will be timed from the end of the question and answer period until the contestant indicates completion to the lead judge.

10. A question and answer period will be allowed at the conclusion of each demonstration to permit the contest judges to query the contestants and further evaluate the contestants' understanding of the demonstrated principle. Questions by the judges may cover any aspect of a contestant's chosen principle(s) as presented in the discussion paper or technical demonstration. This question and answer period is not to exceed 10 minutes in length.

11. **Scoring**—Scoring criteria will be in accordance with the principles of technology scoring sheet and will be scored approximately as follows:

Technical Demonstration—65 percent

Discussion Paper—25 percent

Questions and Answers—10 percent

Factors to be considered in the scoring will include:

Presentation/Composition — such as neatness, grammar, spelling, clarity, layout and information flow

Completeness — all required elements are addressed, presents a full picture of the subject and includes information such as applications

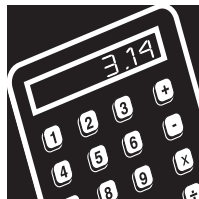
Technical — information is accurate, proper units are used and things such as charts, diagrams and/or formulas are technically sound

Judges will score the question and answer portion based on clarity and poise, technical accuracy and understanding, and logical approach of the answer.

**SKILLSUSA CHAMPIONSHIPS
PRINCIPLES OF TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS					CONTESTANT NUMBER						
	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR							
DISCUSSION PAPER	5	4	3	2	1							
Composition	10	8	6	4	2							
Content	10	8	6	4	2							
Completeness	10	8	6	4	2							
Technical	35	28	21	14	7							
SUBTOTAL	70	56	42	28	14							
TECHNICAL DEMONSTRATION												
Presentation	15	12	9	6	3							
Content	25	20	15	10	5							
Completeness	25	20	15	10	5							
Technical	30	25	20	10	5							
SUBTOTAL	95	77	59	36	18							
Questions & Answers: responses are clear and correct (no Q&A equals +5 points)	15	10	5	0	-5							
TOTAL	180	143	106	64	27							
TIME PENALTY (minus 5 points for each 30-second or fraction thereof for each infraction)												
SAFETY PENALTY (minus 2 points for each infraction)												
CLOTHING PENALTY (minus 0 to 5 percent of total points)												
TOTAL												

RELATED TECHNICAL MATH



Purpose

To evaluate the contestant's understanding and ability to solve mathematical problems commonly found in the skilled trades and professional and technical occupations.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Black dress slacks, white dress shirt, plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy, black socks and black shoes.

For women: Black dress slacks or skirt, with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer, black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members.

Observer Rule

Observers will be allowed to view the test. No talking or gesturing with contestants or any disruptive noise will be permitted.

Equipment and Materials

1. Supplied by technical committee:
 - a. Tables and chairs
 - b. Test problems and instructions
 - c. Scratch paper and pencils
 - d. Formula sheets and conversion tables/charts
2. Supplied by the contestant:
 - a. Hand-held calculator

Note: No reference materials may be used other than those provided by the technical committee.

Scope of the Contest

1. Contestants will demonstrate their ability to solve math problems selected by the national technical committee. Committee membership includes Baxter Healthcare Corp., Northwest Airlines Inc., Propane Vehicle Council and Southern Regional Education Board. The contest poses challenging mathematical problems similar to those encountered in business and industry, including problem-solving situations with real world applications.

2. The test contains 50 problems applicable to any career and technical field. It covers applications of the fundamental operations of whole numbers, fractions and decimals, including applications of percentages, ratio and proportion, averages, areas and volumes. A sound knowledge of basic mathematics, algebra, geometry, trigonometry and basic statistics will prepare the students to exhibit their problem solving skills. The test will provide the student the opportunity to demonstrate their problem-solving skills, not just their mathematical ability.
3. Students have two hours to complete the problems and check their answers. They may use any hand-held calculator; a formula sheet plus a conversion table will be provided. No bonus will be given for early completion of the test.
4. The test should help raise the reasoning, problem-solving and mathematical achievement of all students, not just those who enter the contest.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
RELATED TECHNICAL MATH RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Written Test	50								
SUBTOTAL	50								
Bonus Work Shown	3								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

TOTAL QUALITY MANAGEMENT



Purpose

The contest will encourage student teams to become involved in, and document, a process that will affect positive change within their school and/or community using TQM processes.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: SkillsUSA official attire: Official red blazer, windbreaker-style jacket or sweater; black dress slacks; white dress shirt; plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy; black socks and black shoes. **For women:** Official red blazer or windbreaker-style jacket or sweater; black dress slacks or skirt with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer; black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

1. All team members must be active members of SkillsUSA at the local, state and national level in accordance with state and national guidelines for membership. Teams will be selected from the established guidelines and will submit all materials by the established deadline. Materials not received in the national headquarters by the established deadline of Feb. 15 will not be considered.
2. Team projects will be screened to the Institutional Event Criteria. A team must score 80 percent of the available points to be accepted to the National TQM Event. Teams identified to enter the National TQM Event will be notified no later than April 1. Teams not selected for the national event will be notified, but not necessarily before April 1.
3. A team may be made up of Functional Groups, Cross-Functional and/or Interest-Friendship Groups (individuals from one class or a combination of classes in an educational institution, and high school and college/postsecondary students may make up a team). Teams may consist of not more than five members.
4. There is no limitation to the number of team projects/processes that may be submitted from one school or state. However, a team may submit only one project/process for consideration. In

addition, if two teams submit from the same institution, a person may only participate on one team. The project/process should begin early in the school year (September/October) with closure for this project/process in June. *The report to be sent to the SkillsUSA national headquarters in February does not have to be completed but must show that the team has an understanding of the TQ process and the data gathered at that time.* However, the school improvement project must be complete by the national conference and will be presented at nationals.

5. The project/process selected must benefit the educational institution and/or students attending the institution.
6. Ten copies of the project/process report must be received in the SkillsUSA national headquarters by the established deadline of Feb. 15.
7. Total page count for the project/process report may not exceed 25 pages, excluding minutes of meetings, graphs and charts.
8. All pages will be 8½"x11", and, with the exception of the title page, are numbered.
9. The text of the project/process report will be typed (10 pt. Times Roman or equivalent). Hand-made or computer-generated graphs and charts are acceptable. Professionally made graphs and charts are unacceptable.
10. The title page will include the name of the institution, name of the class or classes, name of the team (if one exists), names of the team members and date of submission of materials.
11. The second page will be the Table of Contents.
12. The third page will be a team "Bio-Sheet" regarding the arena of TQM knowledge gained (classroom/extracurricular/work related activities) as well as experience each team member brought to the effort.
13. The fourth page will consist of verification from a senior education institution official that the project/process is in line with an established institutional target or objective.
14. The book must be organized by activity in the same sequence as the Project/Process Evaluation sheet. Points will be deducted for each activity out of sequence. The sequence of sections will be as follows:
 - a. **Problem/Process Statement:**
A statement describing the problem/process to be improved by the team and an explanation of the reasons there is a need for improvement. The following fundamental TQ questions should be addressed in the statement:
 1. What is the problem?
 2. Who is my customer?
 3. What are the expectations of my customer?
 4. What is my product or service?

5. How will my product or service fulfill the customers' expectations?
6. What data is needed?
7. How can the process be improved?
8. How will the improved process meet or exceed my customers' expectations?

b. Goals/Objectives

1. Are the goals of the project/process clearly defined and communicated?
2. How do the goals contribute to the educational institution's targets and/or objectives?
3. How was the goal/need for improvement selected for study (use of decision-making/brainstorming tools)?
4. Is the goal/objective tied to a well documented need?
5. Who is the targeted audience?
6. What is the desired result?

c. Process/Evidence of Planning (Methodology)

1. Is there evidence that the team met regularly and that the meetings were effective?
2. Does the material submitted communicate the processes used?
3. Was the process/problem clearly identified?
4. Were root causes identified and verified?
5. Were targets and indicators set?
6. Were several possible alternatives to solving the problem/process identified?
7. Was cost/benefit analysis used?
8. Were customers' needs, etc., used to select the process for improvement?
9. Was an action plan for implementation developed?
10. Did the team employ the Plan-Do-Check-Act/Plan-Do-Study-Act (PDCA/PDSA) cycle, or other project tracking tools, throughout the project?

d. Teamwork

1. Is there evidence that each member of the team played a role which contributed to the success of the project/process?

e. Innovation

1. Did the team use a creative approach in the problem solution?
2. Did the team use a creative approach in their use of tools?

f. Use of Analytical Tools/Data Display

1. Was a progress analysis conducted periodically during the process?
2. Did the project utilize appropriate analytical tools and techniques?
3. Were the tools that were used correctly applied (evidence of innovative use of tools and techniques) to the situation?

4. Were the tools used effectively in displaying data?
5. Are the data displayed clearly and concisely?
6. Are charts and graphs clearly and completely labeled?

g. Preliminary Results

1. Were possible solutions tested using the check/study portion of PDCA/PDSA?
2. Was the team effective in proposing its recommendation to the customer?
3. Do the materials clearly convey the team's solution?
4. Were appropriate target and goals identified?
5. Were appropriate target and goals tracked?
6. Were appropriate target and goals met?
7. Will specific results be measurable?
8. What system modifications were made to ensure monitoring of process, feedback and improvement to ensure change is maintained?
9. What plans have been made to share the results with other institution administrators, students and/or instructors?

Scope of Contest

1. Teams will participate in a three-day event. The days will be used for (a) orientation, (b) data gathering, (c) preparation of materials, (d) presentation practice and e) team presentations to the panel of judges. Teams will present their findings and recommendations to the panel of judges. National technical committee membership includes BHPbilliton Corp., Caterpillar Inc. Caterpillar Remanufactured Products Group, Honeywell Aerospace, Honeywell Engines & Systems, Kansas City American Society for Quality and Pulte Homes.
2. Teams shall demonstrate use of the basic Total Quality (TQ) tools and problem-solving skills by analyzing and recommending solutions to a problem/process experience. The team demonstrations shall consist of two parts: (a) an institutional team presentation on Tuesday of their local institution problem/process, and (b) a presentation on Thursday that is the result of findings from the onsite problem/process.
3. The demonstration will be presented at times assigned during the team orientation to a panel of judges with experience in Total Quality Management composed of education, business and industrial professionals. All participants will receive recognition for their efforts.
4. The institutional presentation will be counted as 25 percent of the total score. The on-site problem/presentation will be counted as 75 percent of the total score.

5. It is expected that certain cornerstones of TQM philosophy be showcased during the project implementation and demonstration. These may include, but are not limited to: benchmarking, brainstorming, continuous improvement, cause and effect relationships, customer satisfaction, data collection, decision making, defining and describing a process, empowerment, idea generation, prioritization, reaching consensus, teamwork and variation.
6. All studies should encompass the following items:
 - a. Identify and define the opportunity:
 1. Identify the customer
 2. Identify the customer's needs
 3. State the problem or areas of improvement within the identified opportunity clearly and concisely
 4. Quantify with data
 - b. Investigate:
 1. Show the data gathered on the problem or opportunity for improvement with decisions being based on facts, not opinions
 - c. Analyze:
 1. Show how the team determined the cause(s) of the problem and gained an understanding of the variation that is occurring in the process
 - d. Develop various solutions:
 1. Show alternative approaches or changes that would improve the situation
 2. Show analysis used to select the most beneficial solution to implement
 - e. Select and/or recommend the approach to implement.
 - f. Use of analytical decision making or other "basic quality tools" (flow charts, bar graphs, cause and effect diagrams, pareto diagrams, etc.)
 - g. Show/describe a method to standardize/institutionalize the process
3. The criteria listed on the Team Evaluation Form are the basis for this event. They are to provide direction and assistance to the participants, their advisors or consultants and judges. They also identify the scope of the overall event.
4. The order of presentation by the teams will be determined by random selection by the judges during the team orientation session. The order will be reversed for the second presentation.
5. During the presentations, the teams must work independently. They are not permitted to receive assistance from judges, teachers or other observers during the performance. Teams will be disqualified for receiving such assistance.
6. No observers will talk or gesture to contestants.
7. No observers will be permitted in the preparation or holding rooms for the final presentation.
8. The presentations will be open to the public. Teams may observe the presentations but only after they have completed their presentation at each stage.
9. Additional limitations on observers, such as entering or leaving an event during a demonstration, will be posted to protect teams from unnecessary distractions.
10. Neither cameras with flash attachments nor recording devices of any kind will be permitted in any event area without permission of the SkillsUSA Championships director.
11. Each team presentation shall be limited to 15 minutes. An additional five minutes will be allowed for presentation set up. Only team members may assist in the set up.
12. Judges will be allowed an additional 10 minutes for questions and clarification and for giving feedback to teams.
13. Contestants will demonstrate knowledge in the following criteria:
 - a. problem/process statement
 - b. goals/objectives
 - c. process/evidence of planning (methodology)
 - d. teamwork
 - e. data collection
 - f. use of analytical tools/data display
 - g. results
 - h. innovation

General Rules and Regulations

1. Participants will enter this event as a team. A team may be composed of members of a single or various classes. High school and college/postsecondary students attending the same institution may make up a team. However, **the team may be composed of not more than five registered members.** Team presentations must only be made by registered members in attendance. All team members must actively participate (speak) during the final presentation to the panel of judges.
2. Decisions of the judges will be final.

Method of Presentation

1. Overhead transparencies, flip charts, slides or computer projection may be used to deliver the presentation. The data presented must represent the status of activity relative to the project selected.
2. The presentation of the on-site case study will be limited to overhead transparencies, flip charts, etc. Computer-aided presentations will not be allowed for the on-site project.

3. Each presentation of the projects (institutional and site) will be limited to 20 minutes (15 minutes for the presentation and five minutes for setup).
4. A professional presentation is expected from each team. This includes, but is not limited to, posture, eye contact, clarity, volume, teamwork, effective use of visuals, use of time, group dynamics.
5. Judges will be allowed an additional 10 minutes for clarification, questions and to provide feedback to each team.

Equipment & Materials

1. The following items will be supplied by the technical committee:
 - a. overhead projector and screen
 - b. lectern
 - c. flip chart, easel and marking pens
 - d. masking tape
 - e. overhead transparencies
 - f. computer and printer for creating presentation items
2. The team will provide to the committee (but not limited to):
 - a. Overheads/transparencies (transparencies can be black and white, color or available transparency stock). Coloring is acceptable. No commercially purchased or produced graphics are allowed.
 - b. Six hardcopies of handouts for judges (these should represent the project with elements of data and results).

Important: When you mail your team projects to the national office, be sure to include a contact name, mailing address and telephone number for notification of selection for national competition.

SKILLSUSA CHAMPIONSHIPS
TOTAL QUALITY MANAGEMENT ONSITE EVENT EVALUATION FORM

Date: _____ Judge: _____ Team Name: _____		No. of Members: ____	
Category: (enter value in box)	Judge's Comments: (enter additional comments on back)	Category: (enter value in box)	Judge's Comments: (enter additional comments on back)
Presentation: <ul style="list-style-type: none"> • Clear, concise • Effective use of graphics to communicate • Best use of time 		Develop Problem Statement: <ul style="list-style-type: none"> • Understand concept of continuous improvement • Methodology • Clear definitive statement 	
Analysis Techniques: <ul style="list-style-type: none"> • Appropriate use of continuous improvement tools • Effective data gathering and use in decision making 		Identify Possible Causes: <ul style="list-style-type: none"> • Diagrammed • Thorough assessment • Understand cause and effect 	
Teamwork: <ul style="list-style-type: none"> • Team Participation • Level of involvement of others • Group dynamics • Roles 		Develop Solution and Action Plan: <ul style="list-style-type: none"> • Alternative solutions explored • Remedies consistent with evaluation • Milestones defined 	

VALUE LEGEND

Values	Expectations		Approach	Evidence of Understanding TQM
3.00–3.74	Does Not Meet Expectations		<ul style="list-style-type: none"> • Little evidence that approach affected results • Methods, tools and techniques used with little understanding 	<ul style="list-style-type: none"> • Limited understanding of the principles and values of TQM • Limited ability to demonstrate concepts through work study or project presentation • Some phases of project follow an action plan
3.75–3.80	Meets Expectations	Bronze	<ul style="list-style-type: none"> • Some evidence that approach affected results • Methods, tools and techniques used with limited understanding 	<ul style="list-style-type: none"> • Limited understanding of the principles and values of TQM • Ability to demonstrate concepts through work study or project presentation • All phases of project follow an action plan
3.81–3.90	Exceeds Expectations	Silver	<ul style="list-style-type: none"> • Project-focused • Methods, tools and techniques used with good understanding 	<ul style="list-style-type: none"> • Good comprehension of the principles and values of TQM • Good understanding demonstrated through project presentation and specific questioning
3.91–4.00	Consistently Exceeds Expectations	Gold	<ul style="list-style-type: none"> • Flexible • Methods, tools and techniques used with complete understanding 	<ul style="list-style-type: none"> • Thorough comprehension of the principles and values of TQM • In-depth understanding demonstrated through project presentation and specific questioning • Results are exceptional

SKILLSUSA CHAMPIONSHIPS
TOTAL QUALITY MANAGEMENT INSTITUTIONAL LEVEL EVENT CHECK LIST

ITEMS EVALUATION (Each item is evaluated in a range of 1–4)	POSSIBLE POINTS
BOOK LAYOUT: Title page _____ Table of contents _____ Team biography _____ Goal/objective statement _____ Letter of verification report submitted in format with graphs/charts _____ Was the material presented in a professional manner? _____ Does the overall quality of the book reflect neatness, clarity and innovation? _____	24
PROBLEM STATEMENT: What is the problem? _____ Who is my customer? _____ What are the expectations of my customer? _____ What is my product or service? _____ How will my product or service fulfill the customer's expectation? _____ What data are needed? _____ How can the process be improved? _____ How will the improved process meet or exceed my customers' expectations? _____	32
GOALS/OBJECTIVES: Are the goals and the goals of the project/process clearly defined and communicated? _____ How do the goals contribute to the educational institution targets and/or objectives? _____ How was the need for improvement selected for study (use of decision making/brainstorming tools, etc.)? _____ Is the goal objective tied to a well-documented need? _____ Who is the targeted audience? _____ What is the desired result? _____	24
PROCESS/EVIDENCE OF PLANNING (Methodology): Is there evidence that the team met regularly and that the meetings were effective? _____ Does the material submitted communicate the processes used? _____ Was the process/problem clearly identified? _____ Were root causes identified and verified? _____ Were targets and indicators set? _____ Were several possible alternatives to solving the problem/process identified? _____ Were several possible alternatives to improving the problem/process identified? _____ Was cost/benefit analysis used? _____ Were customers' needs used to select the process for improvement? _____ Was an action plan for implementation developed? _____ Did the team employ the Plan-Do-Check-Act (PDCA)/Plan-Do-Study-Act (PDSA) cycle throughout the project? _____	40
TEAMWORK: Is there evidence that each member of the team played a role that contributed to the success of the project process? _____	4
INNOVATION: Did the team use a creative approach in the problem solution? _____ Did the team use a creative approach in its use of tools? _____	8

SKILLSUSA CHAMPIONSHIPS
TOTAL QUALITY MANAGEMENT INSTITUTIONAL LEVEL EVENT CHECK LIST (cont'd)

ITEMS EVALUATION (Each item is evaluated in a range of 1-4)	POSSIBLE POINTS
USE OF ANALYTICAL TOOLS/DATA DISPLAY: Was a progress analysis conducted periodically during the process? _____ Did the project utilize appropriate analytical tools and techniques? _____ Were the tools that were used correctly applied (evidence of innovative use of tools and techniques) to the situation? _____ Were the tools used effectively in displaying data? _____ Are data displayed clearly and concisely? _____ Are charts and graphs clearly and completely labeled? _____	24
PRELIMINARY RESULTS: Were possible solutions tested using the check/study portion of PDCA/PDSA? _____ Was the team effective in proposing its recommendation to the customer? _____ Do the materials clearly convey the team's solution? _____ Were appropriate target and goals identified? _____ Were appropriate target and goals tracked? _____ Were appropriate targets and goals met? _____ Will specific results be measurable? _____ Were system modifications made to ensure monitoring of the process feedback, and improvements to ensure change is maintained? _____ What plans have been made to share the results with other institution administrators, students and/or instructors? _____	36
TOTAL	194 Max 155 Min
COMMENTS:	

SkillsUSA Championships

Technical Standards

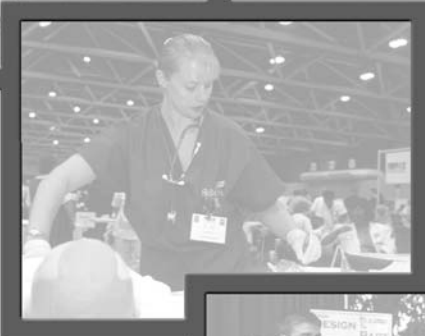
2005–2007

Trade, Industrial and Technical Contests



3-D Visualization and Animation
Advertising Design
Architectural Drafting
Automated Manufacturing Technology
Automotive Service Technology
Aviation Maintenance Technology
Building Maintenance
Cabinetmaking

Mechatronics
Motorcycle Service Technology
Nail Care
Photography
Plumbing
Power Equipment Technology
Precision Machining Technology
Preschool Teaching Assistant
Residential Wiring
Robotics and Automation Technology



Sheet Metal
TeamWorks
Technical Computer
Applications
Technical Drafting
Television (Video) Production
Welding



Carpentry
CNC Milling Technology
Collision Repair Technology
Commercial Baking
Computer Maintenance Technology
Cosmetology
Criminal Justice
Culinary Arts
Diesel Equipment Technology
Electronics Applications
Electronics Technology
Food and Beverage Service
Graphic Communications
Heating, Ventilation, Air Conditioning and Refrigeration
Industrial Motor Control
Internetworking
Major Appliance Technology
Marine Service Technology
Masonry



3-D VISUALIZATION AND ANIMATION



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of 3-D visualization and animation.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official white polo shirt with black dress slacks, black socks and black leather shoes.

For women: Official white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs utilizing 3-D imaging and animation as an occupational objective.

Equipment and Materials

1. Supplied by the technical committee

- Workstation with table space for two personal computers, two chairs and space for developing
- Storyboard
- 110-volt electrical outlet
- Two 24"x36" poster boards for storyboard layout and presentation

2. Supplied by the contestants

- Two complete graphics stations including personal computers, monitors and input devices
- Software of choice for development and output of animation and still images
- Two ZIP drives and three 100MB ZIP disks for sharing information between team members during the contest and for submission to the judges at the end of the contest
- Two 8' multiple-outlet surge protectors
- Paper and art supplies for storyboard development to include colored pencils, two 11"x17" tablets, chalk, glue stick, charcoal, and regular pencils

Computers

Contestants may use any brand or type of personal computer from any source (a hometown computer dealer may be willing to serve as a team sponsor).

Software must be pre-loaded and configured. Test the system carefully prior to competition. Make sure your ZIP drive has been set up and tested. Limited on-site technical assistance will be available on contest day.

Minimum System Requirements

The computer hardware must meet or exceed the minimum recommended system requirements from the manufacturer of the software of choice. We strongly recommend that the minimum requirements are *exceeded* when possible.

For example, Kinetix 3D Studio MAX R2 minimum requirements are:

- Pentium® computer running at 90MHZ or faster
- 32MB of RAM
- Display with minimum of 800x600x256 colors
- 100MB of free hard disk space

Software of Choice

Contestants may bring the software of their choice. Software package(s) must be capable of producing both 2-D and 3-D renderings and animation.

Note: Proof of licensing for every software program installed on the contestant's computers must be provided to the technical committee at the pre-contest meeting.

Art Supplies — Contestants should bring personal art supplies desired for the storyboard development. These supplies are subject to approval of the technical committee.

Setup and Tear Down — The setup, configuration and tear down of all contestant-provided equipment will be the responsibility of the team.

Reference Materials — Contestants may bring published reference books and software manuals. Reference materials may not take up more than 1/2 cubic foot of space per team member (total of 1 cubic foot).

Scope of the Contest

Teams must be composed of two students who will demonstrate their proficiency in creating a 3-D image and animation within specified time, hardware and design constraints. The contest will include 3-D visualization and animation skills as selected by the national technical committee. Committee membership includes Applied IDEAS Inc. and Discreet, A Division of Autodesk and Technical Education Products.

Written Test

A written test covering basic skills and knowledge in 3-D visualization and animation will be given.

Practical Competition

Contestants will demonstrate their ability to perform both storyboard design and computer-generated visualization and animation skills selected from the following list of competencies as determined by the SkillsUSA

Championships technical committee. Some areas of consideration will include:

- a. Shapes to 3-D object color, materials and surface maps for creating photo-realistic, artistic and/or graphically pleasing effects.
- b. Use of lights, shadow and cameras for creating photo-realistic, artistic and/or graphically pleasing effects
- c. Assign motion to lights, cameras, materials and objects
- d. Use of geometry deforming methods for creating complex 3-D objects
- e. Use of “bones,” “links,” and other forward and inverse kinematics methods for creating complex animation
- f. Render scenes to high-quality still images
- g. Render animation with a minimum length of 10-second/300 frames

Practical Competition Format

A practical visual design problem will be given, the scope of which should be viable within the seven hour practical competition period. The problem will consist of a topic to communicate, its context and target audience, a rough script to follow and an emotion or graphical effect which should be illuminated in the still and animated output.

1. Preparation of the animation must include the development of a storyboard. However, in the real world the final output is of paramount importance and the storyboard only a means to that end. So, the storyboarding process will be used to judge:
 - a. the participants' teamwork skills
 - b. their ability to creatively reach consensus on a design solution
 - c. their ability to organize their efforts and
 - d. their ability to verbally and visually express ideas between team members and to the client (in this case, the judges)
2. Three to five still images from varied scenes and perspectives must be rendered in medium resolution (640x480 pixels to 1024x768 pixels) and true color (24, 32, or 64 bits per pixel) and submitted to the judges station on a ZIP disk at the completion of the practical competition. Still images must be output to Tagged Image File Format (TIF), Targa (TGA) or Graphic Image File (GIF) formats. These images should clearly show superiority in modeling, material mapping, lighting and composition.
3. Render animation at low resolution (approximately 320x200 pixels) and medium color depth (16 bit) for playback (with a minimum length of 10-second/300 frames). Animation must be output to either Microsoft Movie (AVI) or Macintosh Quicktime (MOV) files and submitted to the judges station on ZIP disk at the completion of the practical competition. The animation should clearly show superiority in composition, staging and the use of motion and object manipulation (morphing) over time.

Anticipation and scene transitions, object stretching and squashing and/or other techniques should be employed to create a sense of realism or graphic impact as defined by the visual design problem.

4. During the contest, the contestants will work as a team. No assistance will be given by other teams, instructors or observers. Limited technical assistance for computer or software malfunction may be given by appropriate manufacturers' representatives.
5. Teams will each be given the same amount of time to accomplish the problem. Everyone will begin at the same time and take a required lunch break, and no one will be allowed to work past the contest conclusion.
6. The technical committee reserves the right to videotape the animation.

Evaluation

The technical committee will be responsible for not only developing the problem for the competition, but also for developing the evaluation tool by which to objectively measure competitors' performance. Judging criteria will be general in nature and will be done from the completed storyboard, still images and animation. Specific criteria will be based on the demonstration of competency in those elements of design, animation and clearly depicting the theme. Emphasis in judging will be placed on the graphical impact and effectiveness in addressing the design problem. Some areas for consideration include:

Planning: The storyboarding process, the degree to which the output images/animation clearly and creatively communicates the solution to the problem without the benefit of support materials.

Modeling: Creation of 3-D objects. The degree to which the animation realistically and accurately portrays something about the problem.

Animating: Defined motion of objects

Rendering: Final rendered output. A quality measured in terms of how well directions are followed in telling the “story,” the visual impact of the problem solution and the judges assessment of the design, revision, final editing and presentation of the design problem's solution.

Originality: Creative techniques

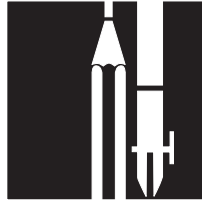
Illustration of the theme: An overall measurement of the distinctiveness of submitted output, including the degree to which the use of technology, aesthetics, lighting and composition demonstrates development of a superior product.

Additional resources are available online. “Contest Singles” include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

SKILLSUSA CHAMPIONSHIPS
3-D VISUALIZATION AND ANIMATION RATING SHEET

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Planning	15									
Modeling	15									
Animating	15									
Rendering	15									
Originality	15									
Illustrates the theme	15									
Written test										
SUBTOTAL										
CLOTHING PENALTY (minus 0 to 5 percent of total points)										
TOTAL										

ADVERTISING DESIGN



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of advertising design.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official white polo shirt with black dress slacks, black socks and black leather shoes.

For women: Official white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with advertising design or commercial art as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Drawing tables and stools
 - b. Drawing boards as required
 - c. Required illustration board and repro material
 - d. Adaptable scanner
 - e. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. T-square 36" minimum
 - b. Triangles
 - c. Rulers
 - d. Masking tape
 - e. Rubber cement or other **nonaerosol** adhesive
 - f. Assorted pencils
 - g. Ink and assorted technical pens
 - h. Eraser
 - i. Cutting tools (razor blades, X-ACTO knife, mat knife and scissors)
 - j. Assorted felt tip markers
 - k. 14"x17" drawing/graphics pad
 - l. 14"x17" tracing pad
 - m. Drafting kit (compass, dividers, etc.)
 - n. Any additional desired medium for sketches, rough layouts and comprehensives

- o. Any additional tools or art supplies desired by the contestant to complete the project as approved by the technical committee
- p. Computers of choice with RAM to run industry standard software (Note: SkillsUSA will make every attempt possible to supply computers through an industry grant. To verify that computers will or will not be provided, go to www.skillsusa.org/april.html.)
- q. Compatible monitor
- r. Keyboard and mouse
- s. External storage device and disk
- t. Industry standard software to be announced each year

Scope of the Contest

1. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: Advanced Technology Solutions Inc., The Art Institutes, Barcita & Barcita Inc., Hallmark Cards Inc., May Advertising International Ltd. and O'Brien et. al. Advertising.
 - a. Demonstrate ability to read and comprehend instructions
 - b. Demonstrate ability to communicate ideas through thumbnails and roughs
 - c. Demonstrate understanding and skills necessary to prepare art and copy for reproduction both traditionally and electronically
 - d. Demonstrate knowledge and appropriate use of industry standard hardware and software
 - e. Apply basic drawing techniques to advertising design
 - f. Understand and apply color
 - g. Demonstrate two- and three-dimensional design concepts for advertising
 - h. Design, indicate and apply typography to advertising design. (Demonstrate understanding, appropriate choice and application.)
2. The theme, size, product and number of colors will be standardized. Indication of headlines, body copy and logo art for the comprehensive may be lifted from the repro sheets supplied by the technical committee.
3. Contestants will not be allowed to use any reference materials that are not supplied by the technical committee.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
ADVERTISING DESIGN RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER					
Thumbnails: Required number of completely different designs Specifications (size and number of elements) Reasonably clear copy indication Reasonably clear art indication Proportion to final comprehensive	50						
Roughs: Development of ideas from thumbnails Required number or completely different designs Specifications (size and number of elements) Reasonably clear copy indication Reasonably clear art indication Application of color Proportion to final comprehensive Neatness	50						
Comprehensive: Development of ideas from roughs Specifications (size and number of elements) Appropriate use of color Typography application, design and accurate indication Aesthetics of final comprehensive Neatness Creativity	100						
Camera-ready Art Items Evaluated Ruling (technique and accuracy)	12						
Indication and mark-up of photo and/or illustration Amber cutting techniques Registration	36						
Paste up assembly: Horizontal alignment Vertical alignment Headline spacing Position of elements Cutting and pasting of elements (accuracy and neatness) Crop marks Reproduction instructions	52						
Computer Art Evaluation Followed directions (size, number of elements, placement, document saved, contestant number on layout)	50						
Accuracy Horizontal alignment Vertical alignment Position of elements Type size, leading placement	50						
SUBTOTAL							
Written test							
Oral Professional Assessment							
CLOTHING PENALTY (minus 0 to 5 percent of total points)							
TOTAL							

ARCHITECTURAL DRAFTING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of architectural drafting.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official white polo shirt with black dress slacks, black socks and black leather shoes.

For women: Official white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with architectural drafting as the occupational objective.

Equipment

1. Supplied by the technical committee:
 - a. The architectural drafting work station will be equipped with a standard drafting table, a work area for reference material, a space for a personal computer and a chair.
 - b. 110-volt electrical outlet
 - c. One formatted IBM-compatible diskette
 - d. Output hardware — plotter or printer
 - e. Drafting paper/vellum
 - f. All necessary information and furnishings for judges and technical committees
2. Supplied by the contestant:
 - a. Unless a national sponsor has been secured, the contestant will be required to provide his or her own PC-type computer, monitor and input devices. Computers may be obtained from any source. To have access to the most current technology, contestants and their schools are encouraged to develop a relationship with a hometown computer/software dealer who can serve as a contestant sponsor.

Note: Should a national sponsor be secured, all states will be notified prior to the next SkillsUSA Championships.
 - b. Architectural software of choice. Proof of licensing for every software program installed on the contestant's computer must be

provided to technical committee at pre-contest meeting.

- c. Students may bring published CAD drafting reference books, tables and software manuals. Reference materials must not take up more than 1/2 cubic foot of space and may not be shared between contestants.
- d. Students may bring published board drafting reference books and tables. Reference materials must not take up more than 1/2 cubic foot of space and may not be shared between contestants.

Note: Total volume of reference material may not exceed 1 cubic foot.
- e. Typical personal drafting supplies desired for board drafting subject to the approval of the technical committee.
- f. Battery-operated calculator
- g. Students choosing to use board drafting equipment must bring their own:
 1. Parallel bar
 2. T-square
 3. Triangles
 4. Tape
 5. Scales

Tables with drafting boards will be provided but will not be installed with the Vemco Drafting Machines.

Note: The setup configuration and the tear down of all contestant-provided equipment will be the responsibility of the contestant.

Scope of the Contest

1. It is at the contestant's discretion as to which drafting tools and techniques will be used: the technology of Computer-Aided Drafting (CAD), traditional board techniques, or some combination of the two. A written test covering basic skills and knowledge in both traditional drafting and CAD may be given.

Competencies to be demonstrated may be selected from the following:

- a. Presentation of alternative designs
- b. Isometric pictorial views
- c. Interior perspective views and traffic patterns
- d. Exterior perspective views
- e. Floor plan with variations
- f. Various elevations
- g. Landscapes
- h. Site layouts with grade elevations
- i. Basement plan
- j. Foundation plan
- k. Joist framing plan
- l. Roof framing plan
- m. Plumbing plan
- n. Electrical plan
- o. Construction details and plan

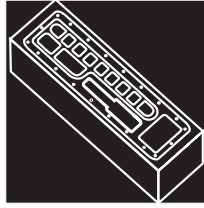
- p. Complete dimensions
 - q. Window and door detail
2. Preparation of drawings will include proper dimensions and line type selection according to current drafting standards.
 3. During the contest, the contestants will work independently. No assistance will be given by other contestants, instructors or observers. Limited technical assistance for computer or software malfunction may be given by appropriate manufacturers representatives.
 4. Contestants will each be given the same amount of time to accomplish the problem. Everyone will begin at the same time and take the required lunch break, and no one will be allowed to work past the contest conclusion.
 5. Each contestant will be responsible for establishing plotting procedures at the computer and for plotting their work to a plot file on a floppy disk.
 6. Judging criteria are general in nature and will be done from plotted drawings, manual drawings and sketches. Specific criteria will be based on the demonstration of competency in those elements of accuracy and productivity included in the contest problem.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
ARCHITECTURAL DRAFTING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Competence in following instructions/solution to problem	100								
Manual drafting technique	50								
CAD technique	50								
Floor plan	25								
Exterior elevations	25								
Interior elevations	25								
Construction details	25								
Accurate dimensioning and notes	20								
Layout and balance of presentation	10								
Site plan	10								
Written test	10								
Oral Professional Assessment									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

AUTOMATED MANUFACTURING TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment in automated manufacturing and the team approach to problem solving work environment. To recognize outstanding students for excellence and professionalism in the field of automated manufacturing technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with precision machining, automated manufacturing, or CAD/CAM or CNC as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. CNC machining center with:
 - Machinist vise
 - Hold-downs and clamps
 - Tool holders
 - End mills
 - b. Part(s) design
 - c. Competition notebook
 - d. Pencils
 - e. Blank diskettes
 - f. Material for machining
 - g. Necessary information and furnishings from judges and technical committee
2. Supplied by the contestants:
 - a. Two computers:
 - One computer** loaded with CAD software for CAD program
 - One computer** loaded with software for CAM program. This computer **MUST** have an open full-sized PCI slot and Windows 98 or higher operating system.
 - b. Licensed versions of the above CAD and CAM software **MUST** be available at start of

the orientation/practice session on Tuesday for loading onto the technical committee's computer(s).

- c. One 6" dial or digital vernier caliper
- d. One dial indicator. Dial indicator must have 3/8" or 1/2" holding shank to fit into tool holder supplied by the technical committee.
- e. One calculator
- f. One pair of 2/4" or 1" parallels
- g. One soft-face hammer
- h. One 6" or 12" steel rule

Note: Only the above listed items will be allowed in the contest area during the competition.

Scope of Contest

1. Teams must be composed of three members. Teams will demonstrate their ability to perform, exhibit and compile skills and knowledge necessary from the following list of competencies determined by the SkillsUSA Championships technical committee. Committee membership includes: intelitek Inc., C & S Hobbies, CNC Software, Inc DEPCO Inc., Learning Labs Inc., National Tooling & Machining Association and Technical Education Solutions LLC.
2. The teams will be presented with dimensioned drawing(s) of a part(s) to prototype. When the teams finish machining the prototype part(s), they will present it to the client (judges). At this time, they will be presented with a second drawing(s) as either a change order or as an additional part(s).
3. Each team will be issued a notebook. This will be a three-ring view binder. Included in the binder will be all the necessary information and forms to complete the project. These forms will not be highly specific but will coach the teams. All binders, forms and drawings must be turned in to the judges at the end of the competition.
4. The competencies required for contestants to successfully compete are as follows:
 - a. **Performing Mathematical and Measurement Calculations**
 1. Measure work piece to the nearest .001 inch
 2. Calculate CNC speed and feeds
 3. Calculate stock utilization and setup
 4. Calculate tolerances
 - b. **Designing, Sketching, Planning Machine Work**
 1. Transfer information from drawing to CAD drawing
 2. Create CAD file for manufacturing
 3. Begin manufacturing documentation process
 4. Process plan
 5. Plot CAD file #1
 6. Export CAD file

7. Process ECO (Engineering Change Order(s))

c. Create Toolpath (CAM file), CNC Code

1. Create process plan (Job Plan)
2. Read-in CAD export file
3. Create toolpath
4. Verify toolpath
5. Create CNC code
6. Send CNC code to machine tool
7. Process ECO

d. Perform CNC Machining Functions

1. Verify CNC file existence
2. Verify toolpath
3. Setup part on mill
4. Set all offsets and tooling
5. Adjust speeds and feeds as needed
6. In-process quality assurance
7. Perform tool changes
8. Perform multiple machining operations in one setup
9. Verify (TQM) process and part
10. Process ECO

e. Inspection of Part TQM process

1. Verify part to standards
2. Verify part to ECO standards
3. Document process

Group Organizational Goal

This is a group competition, and members may interact at will. The competition should run much like industry. The CAD operator will construct the part geometry, the CAM operator will generate the toolpaths, and the CNC operator will do the setup and machine the part. When a team member has spare time, he or she will help others in the group.

One person should not dominate a team by doing the CAD drawing, the CAM toolpath, and running the CNC machine while using the other members simply as support. The contest is designed to promote creativity in organization of production responsibility.

All group members are responsible for double-checking each other's work and quality control.

General Information

All equipment provided by the technical committee will be in place and set up on the Monday before the competition begins. On the Tuesday before the competition, there will be an orientation/practice for all teams. Teams *must* bring their computers and above-listed equipment to the orientation on Tuesday. Teams will *not* be allowed to remove their computers from the competition area until after 3 p.m. on Thursday.

During the orientation, teams will be divided into two groups. Group One will practice on Tuesday morning and compete on Thursday. Group Two will practice on Tuesday afternoon and compete on Wednesday. Team advisors are strongly encouraged to be with their team during the orientation and practice.

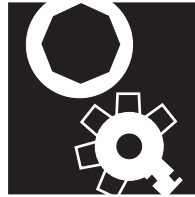
All team members and advisors are required to attend a debriefing session on Friday morning.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
AUTOMATED MANUFACTURING TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER						
CAD Rapid Prototype Dimensioned orthographic of prototype, on disk	200							
CAD SUBTOTAL	200							
CAM Rapid Prototype Process Plan Form	100							
CAM SUBTOTAL	100							
CNC Rapid Prototype 1. Fixturing Description Form	100							
2. Quality Assurance Form	50							
3. Surface Finish/Dimensional Accuracy	150							
4. Hand-In-Time	100							
CNC SUBTOTAL	400							
Concurrent Engineering 1. Change order	50							
2. Process plan form	10							
3. Part run time	100							
4. Surface finish/dimensional accuracy	250							
5. CAD drawing (hard copy)	200							
CONCURRENT ENGINEERING SUBTOTAL	610							
Request for quotation	100							
Safety (deductions)								
Oral Professional Assessment								
CLOTHING PENALTY (minus 0 to 5 percent of total points)								
SUBTOTAL								
Written test								
TOTAL								

AUTOMOTIVE SERVICE TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of automotive service technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA light blue work shirt and navy pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in career and technical programs with automotive technician or automotive service technology as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary tools and equipment for the contest
 - b. Safety glasses
 - c. All necessary service publications for the contestants
 - d. All necessary information and furnishings for judges and technical committee

Scope of the Contest

The scope of the contest will be consistent with the automotive technician task list outlined in guidelines published by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF).

1. Contestants will demonstrate their ability to perform jobs or skills selected from the standards mentioned above as determined by the SkillsUSA Championships technical committee. Committee membership includes ACDelco, ALLDATA, American Honda Motor Co. Inc., AYES Inc., CARQUEST Corp., CARQUEST UnderCar/UnderHood, D.J.R. Marketing Inc., DaimlerChrysler Corp., Delmar Learning, Ford Motor Company, General Motors Corp. ASEP/BSEP, Hunter Engineering Co., MAC Tools,

Megatech Corp., National Institute for Automotive Service Excellence, Snap-on Inc. and Toyota Motor Sales, U.S.A. Inc.

2. Major Areas of the Contest
 - a. Inspecting, repairing and replacing cooling, heating and air conditioning components and systems (college/postsecondary only)
 - b. Identifying, checking, servicing and repairing electrical systems and components including: charging, lighting, ignition, cranking accessories and electronic components
 - c. Measuring and adjusting wheel alignment
 - d. Diagnosing, servicing and repairing steering and suspension
 - e. Diagnosing, servicing and repairing brake systems
 - f. Performing tasks related to engine overhauls, adjustments and component parts replacement
 - g. Analyzing exhaust emissions, testing and replacing emission components
 - h. Diagnosing, servicing and repairing fuel systems
 - i. Performing tasks related to transmissions, differentials and universal joints
 - j. Demonstrating ability to read and use both electronic and paper service information
 - k. Participating in job interview simulation and demonstrating customer service skills
 - l. Demonstrating basic knowledge of environmental, health, and safety practices for automotive shop environment
 - m. Completing a written test developed by Automotive Service Excellence
 - n. Demonstrating safe and proper usage of industry tools and equipment (e.g., scan tools, multi-meters, scopes, precision measuring tools and various hand tools)

Note: Work stations consist of a vehicle and/or simulators, components and service publications. Some or all of the high school work stations may be different than the college/postsecondary work stations.

3. Contestants will be tested on a variety of vehicles commonly sold in the United States. This will include both domestic and import vehicles.
4. Contestants will be judged on safety, quality, ability to follow instructions and procedures, accuracy (in comparison with factory specifications), workmanship and other skills representative of the trades identified by industry leaders. Time limits will be assigned for each task, but no bonus points will be awarded for early completion.
5. The judging criteria and the points assigned will be determined by the national technical committee.

6. A total of eight to 15 stations will be assigned. Each station must be broken down into specific task criteria and separate steps based on the task. For example:
Station # 1 Wire test and repair segments
Identify faulty circuit = x points
Repair condition = x points
Assemble/retest = x points
Resistor board tests = x points
Compare values to specs = x points
Workmanship = x points
Safety practices = x points
7. The points allowed for each station will be assigned by the national technical committee and will be based on the difficulty of each assigned task.
8. Stations and equipment to be used in the national competition will be published by April 15 each year. To view and print this publication, go to www.skillsusa.org/april.html.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
AUTOMOTIVE SERVICE TECHNOLOGY RATING SHEET**

ITEMS EVALUATED (Points will be assigned by technical committee members based on the difficulty of the task)		POSSIBLE POINTS	CONTESTANT NUMBER						
SUBTOTAL									
Written test									
Oral Professional Assessment									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

AVIATION MAINTENANCE TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of aviation maintenance technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official light blue work shirt and navy pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with aviation maintenance technology as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary tools and equipment for the contest
 - b. All necessary information and furnishings for judges and technical committees
2. Supplied by the contestant:
 - a. Calculator

Scope of the Contest

1. The scope of the contest will be consistent with the airframe and powerplant mechanics certification guide published by the Department of Transportation Federal Aviation Administration Advisory Circular EA-AC 65-2D.
2. The contest for high school contestants will cover those competencies classified as general aviation by the FAA. The contest for college/postsecondary contestants will cover those competencies classified as powerplant and airframe by the FAA.
3. A total of eight to 15 operations will be assigned. Each operation must be broken down into specific criteria and points assigned based on the difficulty of the task.
4. Contestants will demonstrate their ability to perform jobs and skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: American Airlines, Federal

Aviation Administration, Flight Safety Cessna International, International Association of Machinists and Aerospace Workers, Snap-on Inc., United Airlines and United Parcel Service.

a. Structure

1. Install special rivets and fasteners
2. Inspect bonded structures
3. Install conventional rivets
4. Layout sheet metal
5. Inspect honeycomb structure
6. Repair windows
7. Repair doors
8. Inspect sheet metal structure

b. Services

1. Repair and service aircraft and aircraft engines to ensure airworthiness
2. Repair, replace and assemble parts, such as wings, fuselage, tail assembly, landing gear, control cables, propeller assembly and fuel and oil tanks
3. Repair or replace worn-to-damaged components, such as carburetors, superchargers and magnetos using hand tools, gauges and testing equipment
4. Remove engine from aircraft using hoist or forklift truck
5. Disassemble and inspect parts for wear, warping or other defects
6. Repair or replace defective engine parts and reassemble and install engine in aircraft
7. Adjust and repair electrical wiring system and aircraft accessories and instruments
8. Perform miscellaneous duties to service aircraft including flushing crankcase, cleaning screens, greasing moving parts and checking brakes

c. Use of Tools

1. Use of power shears, sheet metal breaker, arc and acetylene welding equipment, rivet gun and air or electric drills to rebuild airframe or its components

d. Use of Manuals

1. Consult manufacturer manual and airline maintenance manual for specifications to determine feasibility of repair or replacement according to malfunction

e. Examination of Engines

1. Examine engines for cracked cylinders and oil leaks and listen to detect sounds of malfunctioning, such as sticking or burnt valves
2. Inspect turbine blades to detect cracks to breaks

f. Testing

1. Test engine operation using testing equipment, such as ignition analyzer, compression checker, distributor timer and ammeter to locate source of malfunction

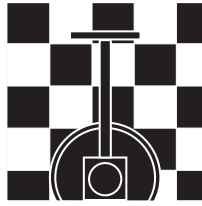
General Information

1. Tasks assigned to a contestant will not have a set time limit or sequence.
2. The following shop safety rules will be followed:
 - a. Safety glasses must be used
 - b. No loose clothing is permitted
 - c. Long hair must be tied behind the head and netted or worn under a cap
 - d. No jewelry will be allowed

SKILLSUSA CHAMPIONSHIPS AVIATION MAINTENANCE TECHNOLOGY RATING SHEET

ITEMS EVALUATED (Points will be assigned by technical committee members based on the difficulty of the task)		POSSIBLE POINTS	CONTESTANT NUMBER						
Written test									
Oral Professional Assessment									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

BUILDING MAINTENANCE



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students in the field of building maintenance.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in career and technical programs with entry-level job skills as the occupational objective. A letter from the appropriate school official on school letterhead stating that the contestant is classified under the provisions of Public Law 105-17, Individuals with Disabilities Education Act, 1997 is required for participation. State associations having restrictions on the release of this information may submit a letter on school letterhead of eligibility which simply states: "I certify that (student name) meets the eligibility requirements for the SkillsUSA Championships Building Maintenance contest. Signed (school official)." The eligibility letter is to be presented to the contest chair at the contestant orientation meeting.

Equipment

Most materials, supplies and equipment will be supplied by the technical committee. The contestant must supply the following:

1. One pair of plastic or rubber gloves with three-quarter sleeves
2. Hearing protection devices

Scope of the Contest

1. Contestants will demonstrate their ability to perform tasks selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes the Kansas City Convention Center.

a. Floor Maintenance

1. Vacuum, scrub, dust mop and wet mop various surfaces

2. Vacuum carpeted surface
3. Strip wax and clean hardwood, vinyl and tile surfaces
4. Operate a floor buffer
5. Identify types of surfaces and care needed for proper maintenance

b. Carpet Care

1. Vacuum carpeted area
2. Bonnet clean carpeted area
3. Shampoo carpeted area by rotary floor machine or dry foam
4. Hot water extraction on carpeted area
5. Removal of stains or spots from carpeted area
6. Glossary of knowledge of carpet terms

c. Measure and Mix Chemicals

1. Demonstrate steps and procedures to measure and mix chemicals
2. Demonstrate knowledge of custodial chemical terminology
3. Indicate knowledge and use of Manufacture Safety Data Sheets (MSDS)

d. Custodial Safety

1. Demonstrate knowledge of safe work practices in custodial services
2. Knowledge and practice of safety in use and handling of electrical equipment
3. Demonstrate knowledge and use of safety of ladders
4. Knowledge and use of safety in the measuring and mixing of chemicals
5. Indicate knowledge of color codes used in custodial cleaning equipment

e. Office and Classroom Maintenance

1. Demonstrate knowledge and procedures in cleaning office spaces and classrooms
2. Knowledge and use of tools, methods, supplies and equipment to make the rooms clean, hygienic and attractive.

f. Window Maintenance

1. Wash windows using correct tools, supplies and equipment
2. Clean blinds, shades and shutters of various types

g. Wall Maintenance

1. Clean various wall surfaces to include painted, tiled, papered and plastered walls

h. Restroom Maintenance

1. Demonstrate steps and procedures to clean restrooms and showers
2. Clean toilet bowls, urinals and wash basins
3. Clean and disinfect restroom and shower ceilings, walls and floors

i. General Maintenance

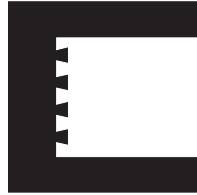
1. Dust and clean furnace filters
 2. Dust and clean furniture and fixtures
 3. Fill dispensers such as soap, towels or paper
 4. Clean chalk boards
 5. Identify tools and materials used in custodial services
 6. Clean and disinfect kitchens, bath, toilet and other public facilities
 7. Properly collect and dispose of various forms of trash
2. Contestants may be asked to provide an oral explanation of a procedure or to answer a question, but there will be no written test.
 3. Careful instruction and explanation of all tasks to be completed will be given to each contestant in both oral and written form to ensure that each contestant fully understands the assigned task.
 4. Time limits will be assigned for each task, but no bonus points will be awarded for early completion.
 5. The judging criteria and points assigned will be determined by the difficulty of the tasks assigned.

Additional resources are available online. “Contest Singles” include prior year’s contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
BUILDING MAINTENANCE RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Floor Maintenance	100								
Carpet Care	100								
Measure and Mix Chemicals	100								
Custodial Safety	50								
Office and Classroom Maintenance	50								
Window Maintenance	50								
Wall Maintenance	50								
Restroom Maintenance	100								
General Maintenance	100								
SUBTOTAL	700								
CLOTHING PENALTY (minus 0 to 5 percent of total possible points)									
TOTAL									

CABINETMAKING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of cabinetmaking and millwork.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in career and technical programs with cabinetmaking and millwork as the occupational objective.

Safety Requirement

Both the instructors and the contestants certify by agreeing to enter this contest that the contestant has received instruction and has satisfactorily passed examination on the safe use of the following power equipment that may be used in the contest:

Router	Radial Arm Saw	Table Saw
Jointer	Band Saw	Drill Press
Hand Drill	Scroll Saw	Cutoff
Saw	Disc and Belt Sander	
Baring Machine		

They also certify that SkillsUSA Inc., the SkillsUSA Championships technical committee and national judges are released from all responsibility relating to personal injury resulting from the use of the above-listed power equipment. Contestants will be removed from competition if proper training has **not** been provided and/or they are using the equipment in an unsafe manner.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary power tools, equipment and work stations for contestants
 - b. All necessary information and furnishings for judges and technical committee

2. Supplied by the contestant:
 - a. Nail apron
 - b. Claw hammer
 - c. Measuring tape
 - d. Combination square
 - e. Two pencils
 - f. $\frac{1}{32}$ ", $\frac{1}{16}$ ", $\frac{3}{32}$ " nail sets
 - g. Block plane
 - h. Utility knife
 - i. Backsaw
 - j. Two hand-screw clamps or two "C" clamps with a maximum opening of 8"
 - k. One set $\frac{1}{4}$ "–1" wood chisels
 - l. 10" or 12" mill bastard flat file
 - m. One set of flat blade and Phillips-head screwdrivers and/or handle with interchangeable bits
 - n. Sanding block
 - o. Hand scraper/cabinet scraper
 - p. Calculator
 - q. Three 8 $\frac{1}{2}$ " x 11" pieces of sandpaper

Note: No additional tools will be permitted.

Scope of the Contest

1. Contestant will be given all necessary information by job sheets or prints of articles to be constructed. Contestants will use joinery techniques as specified.
2. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes Architectural Woodwork Institute, DEWALT Industrial Tool Co., Louisville Lumber & Millwork, Powermatic Corp. and Tummons Custom Woodworking Inc.

a. Applying Wood Veneers and Plastic Laminates

1. Apply adhesives, edge banding and wood edges
2. Apply laminate to core
3. Cut plastic to size
4. Fit plastic laminate joints
5. Trim edges

b. Assembling, Fastening and Installing Components

1. Apply clamping devices
2. Assemble drawers, panel door and joint
3. Assemble ends, back, bracing and face frame
4. Attach molding/trim
5. Fasten parts with nails, screws and staples
6. Fasten top to casework
7. Glue boards edge to edge
8. Install catches, doors, drawer rail and guides, hinges, pulls and knobs, shelves and track and slide for sliding doors
9. Reinforce joints with block/dowel

c. Cutting and Shaping Components

1. Cut butt joint, counter top, dado/rabbet joint, doors, doweled joint, and drawer guides and runners (rails)
2. Cut drawer front, sides, back and bottom
3. Cut ends, back and interior bracing
4. Cut face frame, miter joints, molding trim, mortise and tenon joints, frames and panels, shelving, spline joints and tongue and groove joints
5. Cut out for sink
6. Edge (shape) counter top
7. Plane stock
8. Square solid stock

d. Designing and Laying Out

1. Determine materials from a blueprint
2. Draw detailed plans
3. Estimate labor and material cost
4. Sketch shop plans

e. Finishing Surfaces

1. Apply lacquers, paints, stains, varnishes/polyurethanes and wood filler to nail or screw holes
2. Clean surfaces
3. Remove excess glue
4. Sand surfaces
5. Swell dents

f. Transporting and Installing Cabinets

1. Fasten cabinet to wall
2. Trim cabinets
3. Prepare cabinets for transporting

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
CABINETMAKING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Layout and overall measurements (A one-point penalty will be assessed for each $1/32$ " variance from print specifications)	15								
Machining operations	15								
Personal and general safety in work area	10								
Finished product assembly and construction (Hammer marks, bent or protruding nails, chipped or broken edges, glue spots, dents or nicks, fit squareness and general appearance. A one-point penalty will be assessed for each occurrence)	40								
Accuracy	10								
Completed product	10								
SUBTOTAL	100								
Written test									
Oral Professional Assessment									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

CARPENTRY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of residential and commercial carpentry.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with carpentry as the occupational objective.

Safety Requirement

Both the instructor and the contestant certify by agreeing to enter this contest that the contestant has received instructions and has satisfactorily passed an examination on the safe use of a portable power saw. They also certify that the contestant's saw has been thoroughly inspected and is in safe working condition. Further they agree that SkillsUSA Inc., the SkillsUSA Championships technical committee and national judges are released from all responsibility relating to personal injuries resulting from its use. Contestants will be removed from competition if proper training has not been provided and/or they are using the equipment in an unsafe manner.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Sufficient lumber for two 2'x4' sawhorses for each contestant
 - b. All lumber and materials, as specified on the job sheet
 - c. Job sheets and blueprints for each contestant and judge
 - d. All necessary information and furnishings for judges and technical committee
 - e. Hard hat
2. Supplied by the contestant:
 - a. Four portable sawhorse brackets (steel or plastic) that accept 2"x4" lumber only

- b. One 8 pt. crosscut saw (10 pt. or 12 pt. optional)
- c. Claw hammers (1 trim and 1 framing)
- d. One set chisels ($\frac{1}{4}$ " to 1")
- e. Framing square
- f. 6' folding rule and/or 16' or longer steel tape measurer
- g. Utility knife with standard and hookbill blades
- h. Two pencils
- i. One each — 1 and 2 pt. Phillips and 4" and 8" standard screwdrivers
- j. Wrecking bar or gooseneck pinch bar
- k. Coping saw and extra blades
- l. Cat's paw (nail puller)
- m. Chalk box and line
- n. One each $\frac{1}{32}$ ", $\frac{2}{32}$ " and $\frac{3}{32}$ " nail sets
- o. Straight aviation snip or any metal cutting snips
- p. 24" or 30" spirit level
- q. Blockplane
- r. Combination wood rasp and file (8")
- s. Carpenter's tool and nail pouch with belt and/or suspenders
- t. Stair gauges (optional)
- u. One pair slip joint pliers
- v. Combination square and/or speed square
- w. 25' power cord (UL approved grounded)
- x. Calculator
- y. Power circular hand saw with new carbide-tipped blade
- z. Other power tools may be added with one year's advanced notice to the state SkillsUSA associations

Scope of the Contest

1. Contestants will demonstrate their ability to perform jobs and skills selected from the following list of competencies considered essential by the SkillsUSA Championships technical committee. Committee membership includes: Associated General Contractors of America Inc., Home Builders Institute, National Association of Home Builders and Steel Framing Alliance.

a. Blueprints and Specifications

1. Interpret and determine dimensions from multiview drawings
2. Interpret specifications and drawing notes
3. Identify plot plan information such as reference points and bench marks
4. Interpret oral and written changes
5. Understand common abbreviations and symbols
6. Interpret door, window and finish schedules

b. Building Site

1. Use builder's level and transit properly for layout and elevation

c. Building Materials

1. Identify, receive and inspect materials
2. Store lumber and other materials properly

d. Foundations and Forms

1. Construct and align various footing forms to include keyways, bulkheads, dowels and anchorages
2. Construct and align foundation wall and wall forms to include pilasters and beam pockets
3. Construct and align column and pier forms
4. Maintain form materials properly

e. Rough Framing

1. Identify framing members and select materials
2. Frame and install sill plate, girders, floor joists and bridging
3. Frame floor opening and subfloor
4. Build or erect safe scaffolding
5. Frame and brace walls to include corners, openings, trimmers, cripples, partitions, plumbing partitions, fixture backing and sheathing
6. Frame stair stringer and other components

f. Roof Framing

1. Identify types and components of roof construction
2. Determine rafter lengths from a rafter scale
3. Calculate and use the rise and run of a common roof
4. Lay out a common roof plan
5. Lay out, cut and install common rafters, ridge board, collar ties, gambrel rafters, valley rafters, valley jack rafters, tail rafters, hip rafters, hip jack rafters and cripple jack rafters
6. Frame roof openings, dormers and saddles
7. Build roof trusses; and lay out, cut and install purlins
8. Install roof sheathing

g. Exterior Finish

1. Construct, install and trim window and door frames
2. Install corner boards, molding or metal corners
3. Install wood bevel and lap siding and aluminum or vinyl siding
4. Install wood shingles and miter corners
5. Exterior finish rake, open cornice and box cornice

h. Interior Finish

1. Install gypsum board
2. Cut and install paneling and trim
3. Fit and hang doors and trim to include swinging, sliding, folding and pocket doors
4. Construct closets and built-in units and install accessories
5. Cut and install crown molding or other moldings

i. Stairs

1. Lay out a straight run stringer and a two-flight stringer set with landing using a carpenter square
2. Calculate rise, run and tread width
3. Cut and install stair treads and stair skirt

j. Lumber

1. Match letters designating uses in plywood or composition board to their current application
2. Match common hardwoods and softwoods to their uses
3. Identify types of trim and moldings
4. Identify common defects in lumber
5. Write a requisition for ordering lumber
6. Compute board feet

k. Tools

1. Safely use and maintain the following:
 - a. Hand Tools
 1. Sliding T-bevel
 2. Tape measurer
 3. Combination square/speed square
 4. Coping saw
 5. Keyhole saw
 6. Folding rule
 7. Hammer
 8. Punch
 9. Hand saw
 10. Nail set
 11. Wood chisel
 12. Carpenter's level
 13. Framing square
 14. Hand plane
 - b. Power Tools
 1. Reciprocating (jig saw)
 2. Miter saw
 3. Hand drill
 4. Belt sander
 5. Circular hand saw
 6. Sabre saw
 7. Table saw
 8. Hand plane
 9. Finish sander
 10. Hand router
 11. Pneumatic nailers

l. Time limit

1. Contestants will be stopped when time limits, as specified on the contest job sheet, are up; however, contestants may stop whenever they have completed a particular phase of the contest.
2. The dismantling of the project will be considered the final sequence or task of this contest.

Note: If desired, a contestant may choose to use a standard hand saw without penalties.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
CARPENTRY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Use and care of tools	5								
General safety: job site and power tool operation	10								
Layout of work (accuracy, best use of materials)	15								
Construction (accuracy of cuts, best use of materials, fitting of joints)	30								
Assembly (assembly according to plans, sequence of construction, overall appearance of project)	15								
General workmanship (ability to follow plans, ability to follow written directions, quality of workmanship)	15								
Written test	10								
Oral Professional Assessment									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

CNC MILLING TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment in Computer Numeric Control machining and to recognize outstanding students for excellence and professionalism in the CNC machining field.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with precision machining, automated manufacturing or CNC as the occupational objective.

Equipment and Materials:

1. Supplied by the technical committee:
 - a. CNC Mill with proper work holding devices, as well as vise-parallels
 - b. Workbench
 - c. Necessary hand tools and cutting tools
 - d. Necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. 0–1" micrometer
 - b. 6-inch caliper (digital or vernier)
 - c. Non-programmable calculator
 - d. Pencils and paper
 - e. Machinery's Handbook (optional)
 - f. Deburring tools (files, Emory cloth, etc.)

Scope of the Contest

Each contestant will receive a dimensioned drawing and material to CNC-machine a part. Participants are expected to write a CNC program, set up the machine and tool offsets and machine a part without the use of CAD/CAM software. Only the part will be evaluated, not the CNC program. Participants are given 15 minutes to study the task and ask questions before beginning. The competition may run 6–8 hours, depending on the project design. Competencies required are as follows:

1. Programming
 - a. Write and verify CNC program without the use of CAM software (competitor has the opportunity to correct any program errors on the machine)

- b. Display complete knowledge of DIN/ISO programming (G and M codes)
 - c. Apply the correct use of cutter compensation (G41/G42)
 - d. Adjust speeds and feeds as needed
2. Setup
 - a. Setup machine and establish a zero reference point for machining the part
 - b. Select and mount necessary tools from the provided set
 - c. Establish tool offsets and enter them into the CNC machine control
 - d. Enter any necessary tool corrections into the CNC machine control
 3. Perform mathematical calculations
 - a. Calculate CNC speeds and feeds
 - b. Calculate programming coordinates from the drawing
 - c. Calculate radius tangent points
 4. Measuring
 - a. Measure test part to the nearest 0.001"
 5. Communication
 - a. Read and interpret technical blue prints
 - b. Understand all symbols on technical blue prints, such as geometric tolerances, surface-finish symbols, corner-break symbols, etc.

General Information

The CNC machines will be available for orientation on the day before the competition. During this time, technicians will be on hand to help competitors and their advisors familiarize themselves with the equipment. An actual test part will be programmed, set up and machined from a provided drawing and stock material. Materials used for the competition may be aluminum, brass, cold-rolled steel or delrin.

Test project scoring

The three evaluation criteria for the test part are:

1. Conformity to Print
 - a. Visual conformity of part to drawing (look for shape and features of part)
 - b. Edges broken
 - c. Transitions of surfaces
 - d. Part is burr-free
 - e. Damage to part (clamp marks, scratches)
2. Dimensions

This is an objective scoring. Scores will only be granted if dimension is in compliance with the print. The score for each dimension will either be full points or zero points.
3. Use of Material

If the competitor makes a mistake on the test part, he/she may request a second piece of stock material. A deduction of points will be assessed for the use of extra stock.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
CNC MILLING TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
TEST PROJECT										
Conformity										
Visual conformity	10									
All edges broken	3									
Part is burr free	3									
Surface finish	3									
Dimensions										
Dimension 1	10									
Dimension 2	10									
Dimension 3	8									
Dimension 4	8									
Dimension 5	5									
Dimension 6	5									
Dimension 7	5									
Dimension 8	5									
Dimension 9	5									
Dimension 10	5									
Use of Material (subtract 3 points for each extra stock)	0									
Oral Professional Assessment	5									
Written Test	10									
CLOTHING PENALTY (minus 0 to 5 percent of total points)										
TOTAL	100									

COLLISION REPAIR TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of collision repair technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA light blue work shirt and navy pants, black or brown leatherwork shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or you can order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with collision repair technology as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee: Basic equipment of an auto body and refinishing laboratory
 - a. Materials for metalworking phase:
 1. Identical fenders to be repaired
 2. Plastic filler
 3. Various grits of sandpaper/grinding discs
 4. Plastic filler mixing boards and spreaders
 - b. Materials for painting phase:
 1. Prep scuffing gel
 2. Mixing containers
 3. Clean-up thinner
 4. Color
 5. Strainers
 6. Reducer
 7. Paint
 8. Primer sealer
 9. Clear coats
 10. DA sander pads
 11. Abrasive sanding pads
 12. Sanding blocks
 13. Wooden paint paddles
 14. 2" masking tape
 15. Razor blades
 16. Cleaning towels
 17. Tack cloths
 18. Painters gloves

19. Solvent cleaner
 20. Ultra fine sandpaper
 - c. Materials for plastic repair phase:
 1. Cleaning solvent
 2. Plastic repair material
 3. Mixing boards and spreaders
 4. Abrasive discs and sheets
 5. Plastic car parts
 6. Clamps
 - d. Materials for estimating phase:
 1. Vehicle owner's name and address
 2. Scratch pads
 3. Estimate sheets
 4. Estimate books
 5. Calculator
 6. Parts price list for car involved
2. Supplied by the contestant:
 - a. Safety glasses with side shields
 - b. Dust respirator
 - c. Body files
 - d. Dollies
 - e. Various metal finishing hammers
 - f. 6" DA sander
 - g. Grinder
 - h. Die grinder
 - i. Spray gun
 - j. Paint suit
 - k. Cartridge-type respirator (charcoal-filtered)
 - l. Welding goggles
 - m. Welding gloves
 - n. Welding jacket
 - o. Skull cap
 - p. Welding respirator
 - q. Welding helmet
 - r. Face shield
 - s. Hook-it and sticky back DA pad
 - t. $\frac{1}{16}$ " and $\frac{5}{8}$ " wrenches
 - u. DA pad wrench
 - v. Sanding pads
 - w. Sanding blocks
 - x. Air pressure gauge (spray gun)
 - y. Converter extension hose
 - z. Tape measure

Scope of the Contest

1. Contestants will demonstrate their ability to perform tasks selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: 3M Co., Akzo Nobel Coatings Inc., All Star Marketing Inc., Automotive Service Association, BMW Performance Center, Caliber Collision Centers, Chief Automotive Systems Inc., Dupont Performance Coatings, I-CAR Tech Centre, Martin Senour Paints, Martin-Senour Co., Miller Electric Mfg. Co. Inc., National Institute for Automotive Service Excellence, PPG Industries Inc., Safety Kleen Corp., SATA Spray Equipment, Sherwin-Williams,

Snap-on Inc., State Farm Insurance Companies, The Dupont Co. and Toyota Motor Sales, U.S.A. Inc.

a. Metalwork

1. Repair depressed areas with body filler on a steel fender.
2. Repair depressed area using heat or cold shrinking techniques on a steel fender.
3. Repair depressed areas using the metal finishing techniques on a steel fender.
4. Prepare fender for refinishing.

b. Welding

1. Make a Plug Weld using 18 gauge metal coupons in the vertical position using a MIG welder.
2. Make a Butt Joint with Backing Weld using 18 gauge metal coupons in the vertical position using a MIG welder.
3. Make a Fillet Weld on Lap Joint Weld using 18 gauge metal coupons in the vertical position using a MIG welder.
4. Make a Plug Weld using 18 gauge metal coupons in the overhead position using a MIG welder.
5. Make a Butt Joint with Backing Weld using 18 gauge metal coupons in the overhead position using a MIG welder.
6. Make a Fillet Weld on Lap Joint Weld using 18 gauge metal coupons in the overhead position using a MIG welder.
7. Make a Plug Weld joining 1mm to 1mm aluminum coupons in the vertical position using a MIG welder.
8. Make a Butt Joint with Backing Weld using 2.5mm aluminum coupons in the vertical position using a MIG welder.
9. Make a Fillet Weld on Lap Joint Weld joining 1mm to 2.5mm aluminum coupons in the vertical position using a MIG welder.
10. Make a Plug Weld joining 1mm to 1mm aluminum coupons in the overhead position using a MIG welder.
11. Make a Butt Joint with Backing Weld using 2.5mm aluminum coupons in the overhead position using a MIG welder.
12. Make a Fillet Weld on Lap Joint Weld joining 1mm to 2.5mm aluminum coupons in the overhead position using a MIG welder.

c. Plastic Repair

1. Make cosmetic surface repairs with plastic car parts
2. Surface preparation
3. Mixing and applying repair material
4. Blocking and feather edging

d. Painting and Refinishing

1. Clean and prepare repaired surfaces for painting.

2. Apply corrosion materials
3. Apply primer sealer
4. Mix paint to factory specifications
5. Regulate air and adjust paint gun
6. Demonstrate spot repair, panel repair and overall refinishing techniques
7. Paint with a variety of products including single stage and base coat systems
8. Finish painted surfaces

e. Unitized Body and Conventional Frame Structural Analysis

1. Determine control points in vehicle structure, suspension and steering
2. Gauge and measure the vehicle structure
3. Diagram needed repairs for center, front and rear sections of a vehicle
4. Write an analysis of the needed repairs
5. Identify components of the most common suspension and steering systems
6. Identify and explain function of alignment angles for suspension and steering alignment
7. Measure and diagnose structural/body damage using self-centering datum line gauges and tram gauge
8. Diagram and analyze structural misalignment using computerized measuring system measurements

f. Estimating

1. Contestants will be tested on basic estimating (flat rating) skills. An estimate requiring the completion of part prices, labor and refinish times, and basic estimate calculations will be the basis for testing. Nationally recognized collision estimating guides will be provided.
2. Contestants will be required to complete a written, estimating, and structural analysis test as part of the contest orientation prior to the official contest.
3. The committee will stop contestants at the end of the time allowed for each phase of the contest and will rate contestants accordingly.

Contestants may stop whenever they have completed a phase.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
COLLISION REPAIR TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Metalworking: Safety Proper use of tools Metal straightening Use of filling material Overall appearance	100								
Welding: Safety GMA (Mig) Aluminum Steel	100								
Frame/Structural Analysis: Safety Suspension/steering identification and function Use specification sheet to install gauge measuring system Diagram and analyze structural misalignment using mechanical and computerized measuring system	100								
Refinishing: Safety Surface preparation Featheredging Block sanding Plastic identification General knowledge test	100								
Estimating: Vehicle identification Estimate written legibly List parts in logical sequence Time involved to repair Parts and materials cost Estimate completion Final figure	100								
Written Test (ASE)	50								
Oral Professional Assessment									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

COMMERCIAL BAKING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the commercial baking field.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA white work pants or black and white checkered chef's pants*, white chef's shirt or coat*, white or black leather work shoes, white apron, white chef's hat (paper or cloth) and hairnet. A white chef's scarf is optional. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also order online at www.mtmrecognition.com/skillsusa/.

(*Not available from Midwest)

Eligibility

Open to active SkillsUSA members enrolled in programs with commercial baking/pastry arts as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary equipment and food items
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant (at *least* one of each, but more per item than specified is acceptable):
 - a. One palet knife
 - b. One hand whip
 - c. One large kitchen spoon
 - d. Three pastry bags, tips and scissors
 - e. One bowl scraper
 - f. One dough knife
 - g. One serrated knife
 - h. One pastry wheel
 - i. One bench brush
 - j. One grease brush
 - k. One pastry brush
 - l. One rolling pin
 - m. Three side towels
 - n. One cleaning towel
 - o. One set of nested mixing bowls (1, 2 and 3 qt.)
 - p. One cake comb
 - q. Thermometer
 - r. Timer
 - s. No other food items allowed (i.e. sprinkles, decorettes, etc.)

- t. A small (battery powered or spring) scale (2 lb. to 4 lb. capacity)

Scope of the Contest

1. The contest will be geared toward the commercial (retail) baking business rather than commercial restaurant business.
2. Contestants will be given a written test covering basic baking science and scheduled during a contestant meeting held before the practical contest.
3. The performance phase of this contest will be the actual preparation of goods and presentation of finished products ready for sale to customers.
4. Contestants will be given a predetermined selection of all necessary food items. Spoiled or burnt supplies will not be replaced.
5. Contestants will prepare a total of seven products: six baked goods made from scratch and/or from a fresh or frozen dough, and one iced and decorated cake. The products will be selected by the Commercial Baking Technical Committee from the following categories. Committee membership includes Culinary Institute of America, Food Marketing Resources Inc., LaBonbonniere Bake Shoppes, Quality Pastry Shop Inc., Reinwald's Bakery, The Retailer's Bakery Association and Wal*Mart Inc.

One product each from the following categories:

- Yeast Breads and Rolls
- Quick Breads (No Yeast)
- Sweet Dough Products
- Cookies
- Basic Cake Decorating

Two products selected from one or more of the following categories:

- Danish Pastry (Laminated and Yeast Dough)
- Puff Pastry (Laminated Dough)
- Pate a Choux Products
- Pie and Pie Crust Pastry
- Cakes
- Frosting—Icing and Glazes

6. Contestants will receive product formulas and other instructions on the day of the performance test. The specific products will be drawn from the list below, according to the format described in No. 5.

a. Yeast Breads and Rolls

1. Straight dough formula — soft rolls, such as Parker House, clover leaf, butter rolls
2. Whole wheat bread and rolls
3. Light rye, dark rye, marble rye and pumpernickel bread
4. French or Italian doughhard rolls, French

- bread, Vienna bread, Kaiser rolls, club rolls, baquettes, bread sticks
- 5. Egg rolls with or without seeds — such as braided types, raisin bread
- 6. Cinnamon twist bread
- b. Quick Breads—(No Yeast)—Baked**
 - 1. Loaf types — such as cranberry, date nut, lemon, Irish, cinnamon apple
 - 2. Muffins—such as bran, cornmeal, blueberry, oat bran
 - 3. Biscuits—baking powder, shortcake biscuits
 - 4. Corn bread—for muffins or sheet pans
 - 5. Scones—English or Scotch types
- c. Sweet Dough Products**
 - 1. Coffee rolls, cinnamon buns
 - 2. Pecan rolls and rings
 - 3. Meltaways, crumb buns, cinnamon sticks
 - 4. Filled rings and clusters
- d. Cookies**
 - 1. Cut and roll out—sugar, molasses, plus filled cookies
 - 2. Drop cookies—oatmeal, chocolate, coconut macaroon
 - 3. Bartypes—hermits, fruit bars, raisin bars, nuts
 - 4. Ice box — such as sandwiches, pinwheels, checkerboard and walnut
 - 5. Bagged out—such as spritz, butter, cigarette, russe, florentines
- e. Basic Cake Decorating**
 - 1. Based coating, combing, scrolls and borders, flowers and floral arrangements and writing
- f. Danish Pastry (Laminated and Yeast Dough)**
 - 1. Round, sticks, figure-eights, pockets
 - 2. Bow tie, horseshoe, horns, twists
 - 3. Large filled rings and horseshoe
 - 4. Miniature assortment
 - 5. Cheese, prune and apricot tri-corners
- g. Puff Pastry (Laminated Dough)**
 - 1. Turnovers
 - 2. Napoleons, Italian cream strips
 - 3. Cream horns
- h. Pate a Choux Products**
 - 1. Eclairs, cream puffs
 - 2. Custard cream, whipped cream
 - 3. St. Honore
 - 4. Croq-en-bouche
- i. Pie and Pie Crust Pastry**
 - 1. Regular two crust fruit filled pies
 - 2. Rim crust for one crust soft pies — such as squash and custard
 - 3. One-crust fancy pies, such as lemon meringue and pecan
 - 4. Dutch apple, chocolate cream, butterscotch, pumpkin

- 5. Lattice-top pie crust — plain and interwoven

j. Cakes

- 1. High ratio—layers, cupcakes, loafs, upside-down cake
- 2. Sponge cake — Mary Anns, jelly rolls, lady fingers, round layers and all the variations cold and hot methods
- 3. Angel cake — tubular pans
- 4. Chiffon cake — orange and others
- 5. Spice cake—old-fashioned squares, cupcakes, layers

o. Frosting—Icing and Glazes

- 1. Basic buttercream icing (high ratio method)
- 2. Basic butter cream (melted butter and egg whites)
- 3. Chocolate frosting
- 4. Chocolate pouring icing
- 5. Royal icing
- 6. Boiled frosting

Judging Criteria

Points assigned will be based on the product to be prepared. Judging criteria and points assigned will be explained at the contestants meeting.

Additional resources are available online. “Contest Singles” include prior year’s contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
COMMERCIAL BAKING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
WRITTEN EXAM	30									
GENERAL SKILLS										
Safety	10									
Sanitation	10									
Use of equipment	10									
Personal hygiene and grooming	10									
Production efficiency	10									
SPECIFIC PRODUCTS (Six Products)										
External appearance	30									
Internal appearance	30									
Taste	30									
Salability	30									
Basic Cake Decorating	20									
SUBTOTAL	220									
Oral Professional Assessment										
CLOTHING PENALTY (minus 0 to 5 percent of total points)										
TOTAL										

The Written Test

The National Occupational Competency Testing Institute (NOCTI) administers and scores the Commercial Baking written test. It consists of 100 multiple choice questions. There are two different tests—one designed for high school and one designed for college/postsecondary students.

Knowledge Area	High school	College/postsecondary
General Baking Knowledge	22%	15%
Weights, measures and General Baking Math	14%	10%
Classifications and Properties of Ingredients	13%	9%
Handling and Storage of Ingredients	*	8%
Safety and Handling	12%	8%
Yeast Raised Dough Products	10%	7%
Doughnuts—Cake and Yeast Raised	10%	7%
Cake Decorating	*	4 %
Cakes	10%	7%
Production/Scheduling/Planning	*	7%
Laminated Doughs	*	7%
Cookies, Pies and Pastries	10%	7%
Customer Service and Merchandising of Products	*	4%
TOTAL	100	100

General Skills Scoring Criteria

Safety:

- Uses appropriate lifting techniques
- Keeps work area well-organized and free of hazards
- Follows safety requirements for operating equipment
- Works with a regard for safety of self and others

Sanitation:

- Washes hands correctly and at appropriate times during baking process
- Inspects tools and equipment before using, correctly cleans items
- Uses a clean side towel and replaces as needed during the day
- Avoids contaminating food

Production Efficiency:

- Accurately measures ingredients
- Uses most or all raw ingredients—little or no wasted ingredients
- Uses most or all mixed ingredients—little or no wasted

raw dough

- Properly bakes and finishes product — maximum salable product is produced
- Works quickly, is well organized and manages time well

Use of Equipment:

- Uses appropriate tools and equipment for baking function or product
- Uses mixer correctly
- Correctly uses small wares and tools (thermometer, spoons, measures, etc.)

Personal Hygiene and Grooming:

- Dresses professionally
- Uniform (shirt, pants, skirts, shoes, hat, towel, etc.) is clean
- Wears head gear or other covering
- Hands are clean

Specific Product Scoring Criteria

External Appearance:

- Volume, form or shape, size, symmetry, structure, color, crust, thickness, character or feel, and even bake. For certain products: weight, size, flakiness, over spring, structure, toppings, fillings and glazes

Internal Appearance:

- Volume, break or shred, slice, symmetry, structure, color, grain or density, tunneling or holes, texture or feel, and even bake

Taste:

- Volume, break or shred, slice, symmetry, structure, color, grain or density, tunneling or holes, texture or feel, and even bake, aroma, flavor, mouth feel, after-taste, character, palatable, texture, favorable, moist or dry, and freshness.

Salability:

- Product quality, consistency, and presentation as a desirable consumer good.

Basic Cake Decorating Scoring Criteria

Icing:

- Symmetry — cake centered on board, final shape of cake, sides perpendicular to top, square and level cake
- Opacity (no window or crumbs)
- Enough/too much icing
- Evenness of slice and filling

Design:

- Borders — even and symmetrical
- Use of color
- Does design fit the cake (room for lettering, flower too big or small)
- Balance
- Use of flowers

Technique:

- Borders — level of difficulty
- Correct hand pressure to make desired shapes
- Types of flowers — level of difficulty
- Lettering
- Execution of design

COMPUTER MAINTENANCE TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of computer maintenance technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or you may place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with computer maintenance technology, electronic product servicing, or electronics technology as the occupational objectives.

Equipment and Materials

1. Supplied by the technical committee:

- a. All materials, schematics, and equipment required for the contest

2. Supplied by the contestant:

- a. Pencils
- b. Basic hand tools suited for computer repair and maintenance
- c. Anti-static wrist strap with alligator clip end. Straps must be in proper working order
- d. Test equipment (digital multi-meter)
- e. Diagnostic software with proof of ownership such as original disk or original software license, proof of payment of shareware license fee, or proof of software released into public domain (freeware)
- f. One standard technical data reference book such as those that include BIOS codes, HDD parameters, etc. Books normally used as a classroom text will not be permitted
- g. Virus detection software with proof of ownership, as described in Item e

Scope of the Contest

1. The scope of the contest will be consistent with the industry standards as outlined by the Computer Technology Industry Association (CompTIA)

A+ Certification Examination. Additional standards are outlined in texts such as *The Complete PC Upgrade & Maintenance Guide* (Sybex) and *Upgrading and Repairing PCs* (Que). A+ certification objectives may be found at the following Web site: www.comptia.org. These are also free by request. Write to: CompTIA, 450 East 22nd St. Suite 230, Lombard, IL 60148-6158.

2. The contest will consist of two major parts. The first part will be a computer based exam of 75 to 100 questions. This exam will be representative of the A+ Certification Exam. The second part will be a series of work stations through which each contestant will rotate on a fixed time schedule to troubleshoot both hardware and software problems. The software problems will relate to DOS and Windows operating systems. Some of the work stations will require interaction between the contestants and the judges.
3. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes CompTIA, Heathkit Educational Systems, Learning/Concepts Inc. and Ronald A. Williams, Ltd.
 - a. Demonstrate proper customer interaction skills
 - b. Diagnose and service personal computer systems to the module level
 - c. Diagnose and resolve software problems within the computer
 - d. Locate and identify defective modules within the computer chassis
 - e. Demonstrate ability to load and use appropriate software
 - f. Properly configure pins and jumpers on the motherboard for proper computer function
 - g. Properly install, configure and demonstrate proper operation of devices within the computer cabinet (hard drives, floppy disc drives, CD-ROM drives, fax modems, etc.)
4. Contestants will be provided, as required, manufacturers' documentation of the devices to be installed and/or serviced.
5. Winners will be determined on the basis of their total scores, which includes diagnostic procedures, speed, standard industry procedures, accuracy of adjustments, and correct component replacements.
6. Specific penalties will be assessed for the failure to properly utilize anti-static straps at all times when in contact with the computers, and the introduction of computer viruses into the contest computers. Penalties will be assessed at one point per occurrence, and notice of infractions will be communicated to the contestant when they occur.

**SKILLSUSA CHAMPIONSHIPS
COMPUTER MAINTENANCE TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Customer Interaction	25								
Command Line Knowledge	25								
Windows Knowledge	25								
Component Configuration	25								
Computer Upgrades	75								
Safety Practices	25								
Appearance	25								
Written Test									
Oral Professional Assessment									
Clothing Penalty (minus 0 to 5 percent of total points)									
TOTAL									

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of cosmetology.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white work shirt, black dress slacks, black socks and black leather work or dress shoes. **For women:** Official white top, black dress slacks, black socks or black or skin-tone hose and black leather work or dress shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with cosmetology as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Vanities, mirrors, tables and styling chairs
 - b. Hair dryers, towels
 - c. All necessary information and supplies for judges and technical committee
 - d. Any and all pictures or literature of styles, haircuts and technicals
 - e. First aid kit
 - f. Blood spill kit
2. Supplied by the contestant:
 - a. Cutting shears
 - b. Thinning shears
 - c. Razor and spare blade
 - d. Clipper
 - e. Thermal tools (flat iron and /or curling iron)
 - f. Blow dryer
 - g. Styling products of choice
 - h. Finishing spray
 - i. Combs
 - j. Brushes
 - k. Spray bottle (filled with water)
 - l. Towel
 - m. Rollers (no brush or Velcro types permitted)
 - n. Clippers or hair clips

Scope of the Contest

Contestants will demonstrate their ability to perform jobs or skills selected from the following list of

competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes Burmax Co. Inc., CMW Inc., Fantastic Sam's, Farouk Systems USA, JCPenney Co. Inc., Marianna Milady Publishing Co., Pivot Point International Inc., Regis Corp./Supercuts and The Hair Cuttery.

Note: The technical committee has the *option* of including all or part of the scope as they deem applicable. Some contests may include more than one skill such as a combination of Color and Cutting. Check for "Scope" updates annually in the SkillsUSA Championships April 15 Update, www.skillsusa.org/april.html.

1. Long Hair Design

Contestant will be asked to create a long hair design of their choice.

- a. Time allotted: 1 hour and 30 minutes
- b. 30 possible points
- c. Any technique may be used (such as braiding, twisting, rolls, loops, etc.)
- d. No ornaments or hair pieces allowed
- e. Contestants may apply makeup to the mannequin, but they must complete the application during the time allocated
- f. Earrings *only* may be added once hair design is completed provided it is done within the time frame allowed

2. Women's Cut and Design

Contestant must be able to duplicate a predetermined haircut and style which has been selected by the national technical committee.

- a. Time allotted: 45 minutes
- b. 30 possible points
- c. Cut and Style will be scored as a completed design
- d. Shears, thinning shears, razor and clippers may be required to complete cut
- e. Blow dryer and thermal tools (curling iron, flat iron, etc) may be required to complete style
- f. Styling products of choice may be used
- g. Contestants may apply makeup to the mannequin, but they must complete the application during the time allocated
- h. Earrings *only* may be added once hair design is completed provided it is done within the time frame allowed

3. Men's Cut and Design

Contestant must be able to duplicate a predetermined haircut and style which has been selected by the national technical committee.

- a. Time allotted: 45 minutes
- b. 30 possible points
- c. Cut and Style will be scored as a completed design
- d. Shears, thinning shears, razor or clippers may be required to complete cut
- e. Blow dryer may be required to complete style

- f. Styling products of choice may be used
- g. Styling tools are acceptable

4. **Razor Cut and Design**

Contestant must be able to duplicate a predetermined haircut and style selected by the national technical committee using only a razor. Contestant must perform finger drying (air forming with blow dryer and fingers only).

- a. Time allotted: 45 minutes
- b. 30 possible points
- c. Haircut must be performed on wet hair using only the razor and combs (no shears, clippers or other implement allowed)
- d. Drying and styling must be performed with the blow dryer and fingers (no brushes, picks or combs allowed)
- e. Styling products of choice may be used

5. **Hair Color and Highlighting**

Contestant must be able to demonstrate application procedures for hair coloring and highlighting.

- a. Contestants may be asked to create a color design of their choice in advance on any of the contest above
- b. Contestant may be asked to create color design of their choice using pre-selected products at the contest site or as the technical committee deems. Contestants may be asked to pre-color mannequin. The color on the mannequin will only be scored if the color is done on site during the contest
- c. Contestant may be asked to demonstrate color application techniques
- d. Contestants may be asked to apply color and lightener to mannequin
- e. Contestant may be asked to provide 3x5 card showing formula for mixing color and lighteners
- f. Contestant may be asked to provide 3x5 card showing diagram for application of color and lightener
- g. Contestant may be asked to style mannequin to compliment cut and color design selected

6. **Curling and Relaxing Hair**

Contestant must be able to demonstrate the application procedures for perming and relaxing hair

7. **Communication Skills**

Contestant must be able to follow oral and written instructions, respond to oral questions, demonstrate customer service skills by phone or in person, and/or demonstrate oral presentation skills

- a. Approximately 2-3 minutes
- b. One of the following communication skills will be tested:
 - Booking a new client
 - Follow-up call
 - Professional product recommendation
- c. 15 possible points

8. **Written Examination**

Contestant will answer 50 multiple-choice questions covering all aspects of cosmetology.

- a. 45 minutes
- b. 15 possible points

Contest Instructions

Mannequins

The technical committee will supply mannequins and holders for all areas of this contest. If this changes in any given year, contestants will be told in advance to bring their own mannequins and holders

Orientation Meeting

An orientation meeting is conducted the day before the contest. The contest rules are reviewed as well as clothing requirements. Contestants should be dressed in their required dress code since they will be competing in oral communications and taking a written test following the orientation. Contestants will be escorted to the contest site once the written test and oral communications test have been administered. Once contestants are familiar with the site and receive final instructions, they will receive their gifts from the sponsors of the contest and will be free to leave for the day.

Parade Finale

Once the contest has been completed, contestants will be asked to provide to the commentator a 3x5 card with the following information listed: contestant name, school they represent, city and state they represent. Contestants will be asked to select from their completed mannequins and present them to the audience and judges during the parade finale.

Contest Rules

1. All contestants must keep their working area clean and organized
2. All contestants must follow sanitation and safety procedures throughout the contest.
3. Professional attitude and communication is expected throughout the contest
4. Once time is called, contestant must stop working. Touching the hair of the mannequin or model after time is called will result in three penalty points.
5. Cell phones must be turned off during the contest

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
COSMETOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Written Test	15									
Oral Test	15									
SUBTOTAL										
CLOTHING PENALTY (minus 0 to 5 percent of total points)										
TOTAL										

CRIMINAL JUSTICE



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of law enforcement and/or public security.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official light blue SkillsUSA work shirt, navy pants and black or brown leather work shoes. Skirts and high-heeled shoes are not permitted. To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with law enforcement and/or public security as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary materials for the contest
2. Supplied by the contestant:
 - a. Small pocket notebook for field notes
 - b. Belt and training holster
 - c. 25' tape measure
 - d. Pens and pencils (two each)
 - e. Handcuffs
 - f. Handcuff case
 - g. Flashlight
 - h. Fingerprint kit

Scope of the Contest

1. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: Boone County (Mo.) Sheriff's Department, Olathe (Kan.) Police Department and the Platte County (Mo.) Sheriff's Office.
 - a. Explain constitutional law, criminal law, laws of arrest, rules of evidence, search and seizure, juvenile law, surcharges and civil and criminal liabilities.
 - b. Describe and demonstrate patrol procedures.
 - c. Demonstrate defensive techniques.
 - d. Direct and control traffic.
 - e. Operate a police vehicle safely.
 - f. Investigate traffic accidents.

- g. Discuss the legal aspects of firearms. Demonstrate proper use of firearms and chemical agents.
 - h. Conduct a crime scene investigation.
 - i. Demonstrate proficiency in first responder techniques.
 - j. Discuss trial procedures and testify.
 - k. Demonstrate communication skills.
 - l. Demonstrate interpersonal skills.
 - m. Understand and/or demonstrate basic security systems.
 - n. Use crisis intervention techniques.
 - o. Apply basic elements of emergency response.
 - p. Handling and evaluation of physical evidence.
 - q. Demonstrate first aid and water safety/rescue.
 - r. Demonstrate passive arrest procedures.
 - s. Obtain clear fingerprints from crime scene.
2. Contestants will draw a number and shall be identified by that number.
3. Each contestant must work independently without assistance from instructors, other contestants or observers.
4. The contest will include a skill-related written exam covering appropriate trade, math and problem-solving skills.
5. The judging criteria and points assigned will be determined by the difficulty of the tasks assigned.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
CRIMINAL JUSTICE RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER										
Written Test												
SUBTOTAL												
CLOTHING PENALTY (minus 0 to 5 percent of total points)												
TOTAL												

CULINARY ARTS



Purpose

To evaluate each contestant's preparation for employment in the food service industry and to recognize outstanding students for excellence and professionalism in culinary arts.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official white work pants or black and white checkered chef's pants*, white chef's jacket*, white or black leather work shoes, white apron, white neckerchief, side-towels and a hairnet. Chef's hats (toques) will be supplied by the national technical committee as well as food-handlers' gloves. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also order online at www.mtmrecognition.com/skillsusa/. (*Not available from Midwest)

Eligibility

Open to active SkillsUSA members enrolled in programs with culinary arts or commercial food trades as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Contest problem (menus, recipes, instructions)
 - b. All necessary food items, seasonings, etc.
 - c. Contest site organized (work stations, ranges, refrigeration, access to product and additional equipment) in as fair a manner possible for each and every contestant.
 - d. All cookware and small wares necessary for food preparation.
 - e. All necessary platters, dishes, and china necessary for food presentations.
 - f. All necessary information and furnishings for industry judges and members of the technical committee.
2. Supplied by the contestant:
 - a. No. 2 pencil (2 ea.), small note pad if desired
 - b. Knife kit and cook's tools
 1. French cook's knife
 2. Paring knife
 3. Vegetable peeler
 4. Knife steel
 5. Boning knife
 6. Cook's fork
 7. Slicing knife (meat)
 8. Serrated slicing knife

9. Fillet knife
10. Utility knife
11. Offset spatula
12. Cook's tongs (8-12 in.)
13. Meat thermometer (pocket type)
14. Professional Cook's Tool Kit
 - a. Citrus zester
 - b. Channel knife
 - c. Parisienne scoop
 - d. Apple corer
 - e. Tournier knife
 - f. Canape cutters
 - g. Plastic squeeze bottles

Note: No electrical devices can be allowed (food processors, blenders and hand mixers will be available).

Scope of the Contest

The Culinary Arts competition is designed to show each contestant's abilities to properly perform the tasks and skills necessary to be a successful food-service industry employee. Competencies are focused toward the commercial restaurant, hotel and catering professions.

1. Contestants will demonstrate their ability to perform jobs and skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes American Culinary Federation, Ameristar Corp., Hyatt Regency Crown Center, Marriott Country Club Plaza and the Culinary Institute of America.
2. The performance phase of this contest will be the actual preparation of food and arrangement of food on plates or platters and in dishes ready for serving to the customer. (The contest does not include the actual serving of food to the customer.)
3. Hot food preparation **may** include any of the following:
 - a. Hot appetizers
 - b. Soup cookery
 - c. Entree preparation
 - d. Stock and sauce preparation
 - e. Vegetable cookery
 - f. Starch cookery
 - g. Basic dessert preparation
 - h. Egg and breakfast cookery
 - i. Quickbreads
4. Cold food preparation **may** include any of the following:
 - a. Accompaniment salad
 - b. Salad dressings
 - c. Cold hors d'oeuvres or appetizers
 - d. Chilled soups
 - e. Canape preparation
 - f. Crudite

- g. Bound salad
 - h. Fruit salad
 - i. Vegetable salad
 - j. Salade compose
5. Basic Competencies:
- a. A written test of technical knowledge
 - b. Knowledge of proper sanitation techniques
 - c. Mise-en-place and organizational skills
 - d. Knowledge of proper cooking methods and techniques
 - e. Equipment selection and usage
 - f. Knife skills and proper cutting techniques
 - g. Proper usage of professional cook's tools
 - h. Knowledge of standard weights and measures
 - i. Food product identification and proper handling
 - j. Creative preparation and artistic arrangement, portioning, and presentation of prepared food items
 - k. Overall quality (for example, taste, texture, doneness, etc.) of prepared food items

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
CULINARY ARTS RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Sanitation	10									
Mise en Place	10									
Technical Skills	20									
Overall Quality of All Prepared Food Items; Hot and Cold	40									
Presentation and Creativity	20									
SUBTOTAL	100									
Written test										
Oral Professional Assessment										
CLOTHING PENALTY (minus 0 to 5 percent of total points)										
TOTAL										

DIESEL EQUIPMENT TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of diesel equipment technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA light blue work shirt and navy pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or you can order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with diesel equipment technology as the occupational objective.

Safety Instruction and Verification of Training

Important: Both the instructor and the contestant certify by agreeing to enter this contest that the contestant has received instruction in diesel technology and has demonstrated knowledge of the operation and safe use of the following tools, equipment and machines.

Oxyacetylene Welding and Cutting
Drill Press
Hand Tools
Hydraulic Systems
Electric Welding
Metal Grinders

They also certify that SkillsUSA Inc., the national technical committee and national judges are released from all responsibilities relating to personal injury resulting from their use. Contestants will be removed from competition if proper training has not been provided and/or they are using the equipment in an unsafe manner.

Equipment and Materials

Supplied by the technical committee:

- a. All materials, tools and equipment needed for the contest

- b. All necessary information and furnishings for judges and technical committee

Scope of Contest

1. Contestants will demonstrate their ability to perform jobs or skills selected from the following competencies determined by the SkillsUSA Diesel Equipment Technology technical committee. Committee membership includes: Air Products & Chemicals Inc., ArvinMeritor Automotive Inc., ArvinMeritor Commercial Vehicle Systems, Caterpillar Inc., Cummins Inc., Dana Corp., Detroit Diesel Corp., Eaton Roadranger, International Truck and Engine Corp., J. Jeb Mfg. Co., Kenworth Truck Co., Mack Trucks Inc., Meritor WABCO, National Institute for Automotive Service Excellence, Ohio Technical College, Roadway Express Inc., Ryder Systems Inc., United Parcel Service and Volvo Trucks of North America Inc.
2. Major Contest Areas
 - a. Troubleshoot, service and repair of air brake systems, including antilock brake systems
 - b. Test, service and repair of electrical systems, including charging, lighting, and cranking systems
 - c. Service and repair of steering and suspension systems
 - d. Identify and use basic mechanics' tools, shop equipment and precision measuring instruments
 - e. Test, service and repair air conditioning and heating systems (including laws governing refrigerants) and all other components dealing with the operator's environment
 - f. Test, service and replace wheel end components, including brakes, bearings, wheel seals, and wheels
 - g. Test, service and repair basic hydraulic systems
 - h. Disassemble and assemble engines to factory specifications
 - i. Replace engine component parts
 - j. Troubleshoot, service and repair engine induction, fuel and exhaust systems under load and/or unloaded conditions
 - k. Troubleshoot, service and repair drive train units, including transmissions, clutch, carriers, torque converters and driveline
 - l. Perform basic electric welding and oxyacetylene welding and cutting operations
 - m. Perform basic shop skills, including use of hacksaw, drills, taps and other general shop tools
 - n. Perform preventive maintenance inspections
3. The contest will involve service and repair of large diesel engines, transmissions, drive trains, electrical systems, brakes, hydraulic systems and cab components used in farm equipment, trucks and construction equipment.

General Information

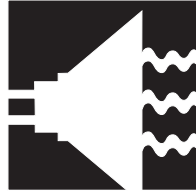
1. Contestants may be assigned problems or projects requiring as little as 20 minutes to perform or as long as four hours.
2. The following general shop safety rules will be followed:
 - a. Safety glasses must be worn at all times when in the work area. If the contestant is taking a written test or is in a job interview, safety glasses can be removed.
 - b. No loose clothing is permitted.
 - c. Long hair must be tied behind the head or netted.
 - d. Gloves must not be worn during operation of machinery, except while doing electric welding and oxyacetylene welding and cutting operations.
 - e. Any liquid or grease spilled must be cleaned up immediately and reported to the judge.
 - f. All injuries, no matter how slight, must be reported immediately to the judge.
3. In addition, contestants will be judged on general shop skills, problem solving skills, shop safety and a written test. Points allowed will be assigned by the technical committee based on the difficulty of the assigned task.

Additional resources are available online. “Contest Singles” include prior year’s contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
DIESEL EQUIPMENT TECHNOLOGY RATING SHEET**

ITEMS EVALUATED (Points should be assigned by technical committee members based on the difficulty of the task)	POSSIBLE POINTS	CONTESTANT NUMBER							
Engine Repair									
Engine Troubleshooting									
Electrical — Electronics									
General Shop Skills									
Chassis									
Transmissions									
Carriers									
Job Interview Skills									
Hydraulics Systems									
Vehicle Inspection									
Failure Analysis									
Brake Systems									
Air Conditioning									
Written Test									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total possible points)									
TOTAL									

ELECTRONICS APPLICATIONS



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of electronics applications.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. All: Safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with electronics applications and fault finding as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. One work station per contestant
 - b. All necessary tools, materials, schematics and equipment required for the contest
 - c. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Pencils
 - b. Safety glasses
 - c. Calculator

Scope of Contest

1. The scope of the contest will be consistent with the industry standards outlined in the Basic Electronics Competencies list from the National Coalition for Electronics Education (NCEE). See www.ncee-edu.org. Following are the major skills areas:
 - a. General technical skills
 - b. DC circuits
 - c. AC circuits
 - d. Discrete solid state devices
 - e. Analog circuits
 - f. Digital circuits
 - g. Microprocessors and microcomputers
 - h. Basic and practical skills

When applied to the training of new electronics technicians, the NCEE standards should enable educators to develop performance-based curricula preparing graduates to leave school with work ready skills, qualified to obtain jobs, to hold jobs successfully, to change jobs within broad occupational areas, and to adapt to changes brought about by emerging new technologies. The current NCEE Basic Electronics Competency standards are available on the Web at www.ncee-edu.org.

2. Contestants will demonstrate their ability to perform jobs or skills selected from the publications mentioned above as determined by the SkillsUSA Championships technical committee. As of this writing, the committee is composed of national representatives ranging from electronics industry manufacturers, major service retailers and test equipment manufacturers, including: Hatton Enterprises, Best Buy Co. Inc., Interactive Image Technologies Ltd., Panasonic Services Co., Philips Consumer Electronics, Pioneer Electronics Service Co., Sencore, Sharp Electronics Corp, Thomson Consumer Electronics, and Toshiba Consumer Electronics.
3. **Diagnosing and Servicing:** This section of the competition consists of several test-station activities. Contestants must successfully complete assigned problems at each station. The problems are designed to provide a variety of challenges based on the fundamental building block circuits in electronic products. The contestant will be guided logically to test basic circuits using modern test equipment. Identical problems are used in high school and college/postsecondary categories. Approximately, 45 minutes are allowed at each station.

Major contest areas will consist of the following:

- a. **Linear Amplifiers:** Contains one problem typically found in linear amplifiers similar to those used in audio circuits.
- b. **Power Supplies:** Contains one problem typically found in a linear or switch-mode power supply circuit.
- c. **Microprocessor Systems and Digital Technology:** Contains one problem typically found in equipment incorporating a micro-controlled system commonly found in personal computers, TVs, VCRs, FAX machines or other electronic equipment.
- d. **Communication Systems:** Contains one problem found in one of these latest technologies: microwaves, high definition television, cellular telephone systems, laser-optics, local area networks, digital communications or satellite communications.

e. Assembly Project: Contestants will assemble an electronic project and will be judged on workmanship, soldering, and assembly techniques; ability to locate, identify and repair all malfunctions; and adherence to safety and ESD procedures.

f. Electronics Theory Exam: Contestants will take an examination covering their knowledge of general electronics. Questions cover DC Circuits, AC Circuits, Discrete Solid State Devices, Analog Circuits, Digital Circuits, Microprocessors and Microcomputers. The exam consists of multiple choice questions and lasts up to two hours.

g. Customer Service: Contestants will respond to questions related to providing professional customer service techniques.

h. Personal Interview: A business/industry preliminary interview will be conducted with an industry professional focusing on the customer service culture.

i. Winners will be determined on the basis of total scores, including diagnosis and troubleshooting, soldering, assembly, customer service and personal interview interaction, and theory exam.

j. Items Evaluated: Relative point values for each item below will be determined by the technical committee.

1. Diagnosing and Service Scoring
 - a. Read and understand the manufacturer's training literature about the circuit.
 - b. Use test equipment to make specified measurements.
 - c. Follow recommended manufacturer's troubleshooting and sequence of procedures.
 - d. Identify the problem.
 - e. Identify the defective component.
2. Practical Skills
 - a. Soldering and desoldering techniques
 - b. Workmanship and assembly techniques
 - c. Final operation of assembled project
 - d. Ability to locate, identify and/or repair all malfunctions
 - e. Safety and ESD procedures
3. Customer Service
4. Personal Interview
5. Amplifier Systems
6. Microprocessor Systems and Digital Technology

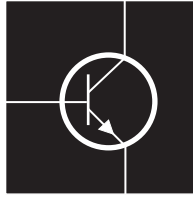
7. Communications Systems
8. Assembly Project
9. Written Exam
10. Personal Interview

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
ELECTRONICS APPLICATIONS RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER											
Linear Amplifiers													
Power Supplies													
Digital/ Microprocessors													
Communications													
Customer Service													
Assembly Project													
Electronics Theory Exam													
Personal Interview													
Written test													
SUBTOTAL													
Clothing Penalty (minus 0 to 5 percent of total points)													
TOTAL													

ELECTRONICS TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of electronics technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. All: Safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with industrial electronics or electronics technology as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All materials, supplies and job information needed to construct and test the designed circuit
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Small pliers
 - b. Wire cutter
 - c. Wire stripper for No. 28 and No. 30 gauge wire
 - d. Small assorted screwdriver set (Phillips and slotted)
 - e. 25-watt soldering iron and associated soldering supplies (**Note:** No soldering guns allowed)
 - f. Pocket calculator with no preprogrammed formulas
 - g. Other hand tools as desired, subject to the approval of the technical committee
 - h. Portable VM/VOM Multimeter*
 - i. 20 or more MHZ dual trace oscilloscope*
 - j. Three 10x probes
 - k. Calculators (can have scientific notation, but

cannot be programmable)

*May be supplied by technical committee. Check SkillsUSA Championships April 15 Update annually at www.skillsusa.org/april.html.

Scope of the Contest

1. The contest will cover the theoretical and practical application of "state of the art" electronic industry standards.
2. Contestants will demonstrate their ability to perform jobs or skills from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes Electronics Supply Co. Inc., Invensys Appliance Controls and United States Postal Service.

a. Technical Recording and Reporting

1. Draw and interpret electronic schematics
2. Record data and design curves and graphs
3. Write reports
4. Maintain test logs
5. Make equipment failure reports
6. Specify and requisition simple electronic components
7. Compose technical letters
8. Write formal reports of laboratory experiences

b. DC Circuits

1. Solve basic algebraic problems as applicable to electronics
2. Relate electricity to nature of matter
3. Identify sources of electricity
4. Define voltage, current, resistance, power and energy
5. Apply and relate Ohms Law
6. Read and interpret color codes to identify resistors
7. Measure properties of a circuit using VOM and DVM meters
8. Compute and measure conductance and resistance of conductors and insulators
9. Analyze, construct and troubleshoot series circuits, parallel circuits, series-parallel circuits and voltage dividers
10. Solve network theorem problems using Kirchhoff, Thevenin, Norton, Superposition and Delta-Wye
11. Analyze, construct and troubleshoot maximum power transfer theory
12. Define magnetic properties of circuits and devices
13. Determine physical and electrical characteristics of capacitors and inductors
14. Analyze and measure RL and RC time constants
15. Set up and operate VOM, DVM, power supplies and oscilloscopes for DC circuits

c. AC Circuits

1. Solve basic trigonometric problems as applicable to electronics (prerequisite to AC)
2. Identify properties of an AC signal
3. Identify AC sources
4. Analyze and measure AC signals using oscilloscope, frequency meters and generators
5. Analyze, construct and troubleshoot AC capacitive circuits, AC inductive circuits, RLC circuits (Series, Parallel, Complex) series and parallel resonant circuits, filter circuits and polyphase circuits
6. Analyze basic motor theory and operation
7. Analyze basic generator theory and operation
8. Set up and operate VOM, DVM and power supplies for AC circuits
9. Set up and operate oscilloscopes, frequency counters, signal generators, capacitor-inductor analyzers and impedance bridges for AC circuits
10. Analyze and apply principles of transformers to AC circuits

d. Solid State Devices

1. Identify properties of semiconductor materials
2. Analyze and measure characteristics of P-N junction diodes
3. Analyze and measure characteristics of special diodes
4. Analyze, construct and troubleshoot diode circuits
5. Identify, define and measure characteristics of bipolar transistors, thyristors and integrated circuits
6. Set up and operate VOM, DVM, and power supplies for solid state devices
7. Set up and operate oscilloscopes, frequency counters, signal generators, capacitor-inductor analyzers and impedance bridges for solid state devices
8. Set up and operate curve tracers and transistor testers

e. Analog Circuits

1. Analyze, construct and troubleshoot single stage amplifiers, multi-state amplifiers, basic power supplies and filters, power supply regulators, active filters, and oscillators
2. Analyze motor or phase control circuits
3. Set up and operate VOM, DVM and power supplies for analog circuits
4. Set up and operate oscilloscopes, frequency counters, signal generators, and capacitor-inductor analyzers for analog circuits

5. Set up and operate impedance bridges for analog circuits
6. Set up and operate recorders for analog circuits

f. Digital Devices

1. Define and apply number systems to codes and arithmetic
2. Analyze, construct and troubleshoot logic gates, logic arithmetic circuits, flip-flops, and encoders and decoders
3. Identify, define and measure characteristics of IC logic families
4. Analyze, construct and troubleshoot registers and counters, clock and timing circuits, multiplexers and demultiplexers, and digital to analog and analog to digital
5. Analyze, construct and troubleshoot displays and representative digital systems
6. Set up and operate VOM, DVM and logic probes for digital devices
7. Set up and operate power supplies, pulsers, oscilloscopes, logic analyzers, signature analyzers, pulse generators and counters for digital devices

g. Microprocessing

1. Analyze, construct and troubleshoot CPUs, BUS systems, memory systems, and input/output ports, microprocessor applications and systems
2. Execute computer instruction sets
3. Analyze and troubleshoot microcomputer systems
4. Set up and operate VOM, DVM, logic probes, power supplies, pulsers, oscilloscopes, logic/data analyzers, signature analyzers, pulse generators and counters for microprocessing

h. Lab Practices

1. Demonstrate proper safety standards
2. Make electrical connections
3. Identify and use hand and power tools properly
3. A written test will be supervised by ISCET.
4. Contestants will be provided with the characteristics, parameters, and necessary information required to accomplish the assigned task.
5. Time limit
 - a. Contestants will begin upon a signal from the timekeeper
 - b. As soon as contestants have completed the assignment and are fully satisfied with the operation and quality of their work, they will signal the judge and stop work. This signal will determine elapsed time and speed.
6. The completed projects will be tested by the judges for quality of work and operating specifications.

**SKILLSUSA CHAMPIONSHIPS
ELECTRONICS TECHNOLOGY RATING SHEET**

ITEMS EVALUATED (Points will be assigned by technical committee based on the difficulty of the project)	POSSIBLE POINTS	CONTESTANT NUMBER								
Quality of Product Fabrication										
Bread Board										
Locating Malfunctions										
Component Identification										
Design										
Written Test										
Final Operation and Test of Product										
Completion of Project within Assigned Time										
Oral Professional Assessment										
SUBTOTAL										
CLOTHING PENALTY (minus 0 to 5 percent of total possible points)										
TOTAL										

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

FOOD AND BEVERAGE SERVICE



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in food and beverage hospitality service.

First, refer to General Regulations, Page 9.

Clothing Requirements

Official SkillsUSA white long-sleeved dress shirt, black dress slacks or skirt, plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy, black leather work shoes, black socks or hose and (optional) black belt. No waiter's jackets, bow ties, cummerbunds or vests are permitted. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996. You may also order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs that include food and beverage service as a part of their instruction and occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All equipment, "food," beverages, chairs, tables, flatware, trays, table settings, cloths and napkins. Guest checks, check presentation folders, contest materials, menus and description of the daily Chef's featured dishes will be provided.
2. Supplied by the contestant:
 - a. One ink pen (blue or black)
 - b. No. 2 pencil for written test
 - c. Hair restraint if hair extends below the collar. (Hair that extends below collar must be restrained)
 - d. Table crumbers, lighters or note pads are optional

Scope of Contest

1. The contest will focus on guest service and guest relations in the dining room and "front of the house" skills of guest hospitality and food and beverage services. Contestants should be prepared to perform the duties of a dining room server as well as seating host.
2. Contestants will demonstrate their ability to perform jobs or skills from the following list of competencies as determined by the national

technical committee. Committee membership includes: Aramak, Brancato's, Eddy's Catering and the Missouri Restaurant Association.

a. Table Setup

1. Various table cloth arrangements
2. Various napkin arrangements, both paper and cloth
3. Centerpieces (optional vase and flowers, candle, condiments and optional base/service/show plate) — demonstrate ability to position these items
4. Silverware, china and flatware settings, both formal and informal (see *SkillsUSA Leadership Handbook*, Page 71, for general setting guidelines).
5. Guest accommodation and placement of chairs

b. Host/Guest Relations (perform role of host)

1. Greeting and welcoming guests to the restaurant ("The SkillsUSA Grill" at national competition)
2. Reservations procedures
3. Escorting guests to tables and seating
4. Host will present menus and then withdraw from table

c. Presentation of Menus (perform the role of dining room server/waiter/waitress)

1. Ability to describe food selections on the menu including a soup of the day, chef's features and a demonstration of overall menu including beverages, salad dressings and desserts. (Contestants should be capable of basic menu selling techniques as well as handling guest questions, potential complaints and problems with product availability.)

d. Greeting and Service Technique

1. Taking guests' orders
 2. Beverage service (water and possible iced tea and soft drinks)
 3. Bread and butter presentation
 4. Serving first course
 5. Serving entrée
 6. Serving dessert and coffee
 7. Clearing the table after each course
 8. Preparation and presentation of the check
 9. Picking up the check, returning for payment and conclusion of service.
3. Actual food from a kitchen may or may not be used, depending on the facility. Mock plates will be used. Beverages will be served.
 4. Contestants will be judged on personal appearance, tableside manner, professionalism, ease with guests, courtesy, general knowledge, and technical and verbal skills.
 5. Presentations will be made to actual "guests" who may or may not also rate contestants, as well as the judges also present.

6. A written test of approximately 30 true-false and multiple-choice questions will be given. The test will cover food and beverage operations, service styles, techniques, dining room equipment, limited wine knowledge, sanitation, understanding of hospitality and guest relation principles, and understanding of culinary terminology.
7. Judging will be in separate increments: exam scoring, table setup, host and greeting, service presentation and grooming/uniform.

Additional resources are available online. “Contest Singles” include prior year’s contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
FOOD AND BEVERAGE SERVICE RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
I. Table Setup	30								
II. Host/Guest Relations	30								
III. Greeting/Guest Service	50								
IV. Written Exam	20								
Contestant's Final Score									

Part I. Table Setup and Polishing

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
1. Place setting for two guests									
Placement/Cover Alignment	5								
Tablecloth/Napkin Fold	5								
Handling Dishes/Flatware	5								
Polishing Quality	5								
Check Chair/Table Base	5								
Correct Table Setup	5								
TOTAL PART III									
SUBTOTAL F&B SERVICE									
Clothing Penalty (minus 0 - 5 points)									
SUBTOTAL F&B SERVICE									

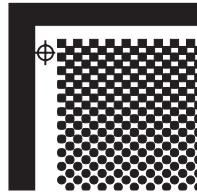
Part II. Personal Appearance, Host and Guest Relations

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
1. Personal Appearance									
Uniform and Shoes	5								
Jewelry	5								
Personal Grooming	5								
2. Greeting of Guests									
"First Impression"	5								
3. Guest Information	5								
4. Escorting Guests to Table	5								
TOTAL PART IV									
SUBTOTAL F&B SERVICE									
Clothing Penalty (minus 0 - 5 points)									
SUBTOTAL F&B SERVICE									

Part III: Greeting and Guest Service

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
1. Greeting of Guests	10								
Initial Contact									
Menu Discussion									
2. Taking the Order	10								
Demeanor, Remarks, Menu Removal									
3. Service of First Course	10								
Plate/Flatware Placement/ Replacement, Beverage, Depart, Clear Dishes									
4. Service of Entrée	10								
Plate Placement, Beverages									
Return to Check on Guests									
Clear Dishes, Dessert, Coffee									
5. Service of Dessert	10								
Plate Placement, Beverages									
Clear, Check Inquiry									
Serve Check, Closing Remarks									
TOTAL PART V (50 pts. max.)									
SUBTOTAL F&B SERVICE									
Clothing Penalty (minus 0 - 5 points)									
TOTAL F&B SERVICE									

GRAPHIC COMMUNICATIONS



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of graphic communications.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with graphic communications as the occupational objective.

Equipment and Materials

All equipment and materials are supplied by the technical committees. Contestants are not required to furnish any materials or tools.

Scope of the Contest

Contestants will demonstrate their ability to perform tasks selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes; Apple Inc., Banta Publications Group, Baumfolder, Boelte-Hall Litho, Central Missouri State University, Eastern Illinois University, Graphic Arts Education and Research Foundation, Hallmark Cards Inc., Heidelberg USA, International Graphic Arts Education Association Inc., NPES, Pittsburg State University, Printing & Imaging Association of Mid America, Printing Industries of America/Graphic Arts Technical Foundation, and Xante Corp..

Each participant will design a printable page using page layout software. Each participant will be required to run two jobs on a Heidelberg press (one and/or two color jobs). You will set up the press, prepare ink and moisture units, adjust paper path and make other adjustments as necessary. You will take the Technical Knowledge Test. You will participate in the Oral Professional Assessment which could include an interview or a customer service situation. You will do Production Planning by laying out jobs and planning through the production cycle. You will

produce a job through Digital Workflow and make CTP plates and/or proofs. In Finishing you will setup and fold at least one small job on a folder and take a written test on finishing.

1. Competencies

a. Digital Workflow

1. Prepare one or more documents for plating using a computer
2. Set up paper proof settings
3. Produce a suitable monochrome proof using the Xante PlateMaker 4 or similar equipment
4. Produce a suitable color proof with separations using the Xante CL30 or similar equipment
5. Check plate settings on platemaker

b. Electronic PrePress

1. Prepare artwork using page layout software of your choosing
2. Use Adobe Pagemaker
3. Use QuarkXpress
4. Use InDesign
5. Prepare artwork for one or more pieces like a flyer, brochure, etc.
6. Create a page
7. Import files
8. Position elements on page
9. Apply color to elements
10. Specify Pantone colors to output in process color (cmyk)
11. Save the file
12. Select and match fonts
13. Use layout tools
14. Check spelling

c. Finishing

1. Preparation of at least one folded piece using a supplied folder
2. Adjustments to folder as necessary
3. Make one or more folds per piece
4. Perform parallel and/or right-angle folds
5. Complete general finishing written test

d. Offset Press Operations

1. Make-ready
2. Produce a two color printed piece either one- or two-sided
3. Produce a one color printed piece either one- or two-sided
4. Mount plates
5. Set up feeding system
6. Eject the plates from the press
7. Wash the blanket
8. Clean up press area
9. Register one or more colors to each other
10. Register image position to the sheet
11. Register image laterally

12. Register image circumferentially
13. Color Matching
14. Use of a densitometer

e. Oral Professional Assessment

Communicate given a setting which requires technical knowledge, common sense and professional courtesy.

f. Production Planning

1. Prepare a dummy for a saddle-stitched booklet
2. Prepare a dummy for a perfect-bound book
3. Prepare a dummy for a work and turn job
4. Prepare a dummy for a work and back (sheetwise) job
5. Prepare a dummy for a work and flop job
6. Provide markings for things like: bind edge, trims, pages, side of sheet, stops, guides, etc.
7. Find press sheet size
8. Determine quantity of sheets needed (parent and press)
9. Determine cost of stock
10. Determine grain direction of stock
11. Determine percentage of waste for the job
12. Estimate ink quantity needed
13. Explain advantages of running a job using one layout method vs. another.

g. Technical Knowledge Test

Answer a maximum of 100 general Graphic Communications questions

2. As soon as the contestants have completed an assigned job and have fulfilled all the requirements on the rating sheet satisfactorily, they should notify a judge. The completed layout and answers will be gathered by the judges for evaluation and scoring.
3. Competencies listed in the scope of contest may be covered in the written test. As hands-on competencies evolve, they will be added to the rating sheet.
4. For equipment specifications, please check the annual April 15 update at www.skillsusa.org/april.html.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

SKILLSUSA CHAMPIONSHIPS
GRAPHIC COMMUNICATIONS RATING SHEET

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
DIGITAL WORKFLOW <ul style="list-style-type: none"> • Application of the software • Results of the proof 	100								
ELECTRONIC PREPRESS <ul style="list-style-type: none"> • Font selection • Typography and proofreading skills • Placement of graphics • Layout meets design specs 	200								
FINISHING <ul style="list-style-type: none"> • Set up • Folding • Good folds • Control of folder 	100								
OFFSET PRESS OPERATIONS <ul style="list-style-type: none"> • Placement of copy • Copy quality register • Duplicator cleanup 	200								
ORAL PROFESSIONAL ASSESSMENT <ul style="list-style-type: none"> • Professional approach • Thoroughness 	100								
PRODUCTION PLANNING <ul style="list-style-type: none"> • Followed instructions • Accuracy of plan 	100								
Technical Knowledge Test	100								
SUBTOTAL	900								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

HEATING, VENTILATION, AIR CONDITIONING & REFRIGERATION



Purpose

To evaluate contestants' preparation for employment and recognize outstanding students for excellence and professionalism in heating, ventilation, air conditioning and refrigeration.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with heating, ventilation, air conditioning and refrigeration as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All heating, refrigeration and air conditioning units necessary for the problem
 - b. Power supply for units
 - c. Test equipment
 - d. All tools and supplies to complete the contest
 - e. All necessary information and material for judges and technical committee
2. Supplied by the contestant:
 - a. Safety goggles
 - b. Hand-held, nonprogrammable calculator, for the contestant meeting as well as for the contest.

Scope of the Contest

1. Contestants will demonstrate their ability to perform jobs or skills selected from the following competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes representatives of Carrier Corp., JKL Technical Sales, Lennox Industries Inc., North American Technician Excellence, Refrigeration Service Engineers Society, Rheem Manufacturing and Scotsman Ice Systems Inc.

a. Job Estimating

1. Plan and schedule work assignments
2. Prepare worksheets
3. Take inventory of supplies, fittings and component parts

b. Install and Service Refrigeration Systems

1. Install a display/storage case and box
2. Cut, swage, flare, bend, soft solder, silver solder, braze and install copper tubing
3. Install/replace a plastic pipe
4. Calibrate a high/low manifold gauge
5. Remove and replace a drier cartridge
6. Fill a charging cylinder
7. Charge a refrigeration system
8. Pump down a system
9. Recover refrigerant from system and store in external container using self-contained recovery equipment.
10. Adjust a thermostatic expansion valve and an automatic expansion valve
11. Install a filter/drier/cleanup kit, a refrigerant metering device, a capillary tube and a solenoid valve body

c. Install and Service Controls

1. Install/replace a temperature control, a pressure control and a solid-state control
2. Calibrate/adjust a temperature control
3. Adjust a pressure control
4. Install/replace/adjust a defrost time clock control
5. Install and service electrical components
6. Install disconnect switch and circuit wiring
7. Install wiring from disconnect switch to equipment
8. Install/replace magnetic starter, magnetic relays, current/potential relay, transformer, electric motor, electric motor capacitor, V-belt and a crankcase heater
9. Remove and replace magnetic starter contacts, a magnetic starter coil, a solenoid valve coil and a magnetic starter overload protector
10. Clean a motor

d. Install and Service Mechanical Components

1. Install/repair a compressor
2. Install/replace a service valve, an in-line valve, a capacity unload, an evaporator, a condensing unit, water regulating valve, cooling tower, water float valve assembly
3. Clean air handling units and condenser/evaporator cooling tower

4. Repair heat transfer coils
5. Adjust a water regulating valve
6. Lubricate a pump

e. Install and Service Refrigeration Specialties

1. Install/replace an evaporator pressure regulator, a discharge by-pass valve, a crankcase pressure regulator valve, a condensate pump unit, a heat exchanger, an energy-saving by-pass valve, a sight-glass/moisture indicator and a head pressure control

f. Diagnose and Problem Solve

1. Troubleshoot refrigerant, air and electrical circuit
2. Test a control thermostat, fuses, capacitor, a compressor for burnout, a capillary tube, an evaporator pressure regulating valve, a hot-gas defrost solenoid coil/valve, humidity and a crankcase pressure regulator valve
3. Check/test compressor oil level and pressure, an electric motor and magnetic starter
4. Check condensate pump and drain, blower assembly and filter, safety controls and moisture indicator (sight glass)
5. Leak test a refrigeration system
6. Check super heat
7. Check/determine CFM of air handling apparatus
8. Determine wet-bulb depression

g. General Heating Systems

1. Service electronic controls, timing devices, sensing devices and solid state control boards
2. Troubleshoot and service various electrical capacitors, relays, contractors, motors, controls, heaters and transformers
3. Check and adjust gas and oil burners
4. Service blower and components in a forced-air system
5. Perform a combustion test
6. Check a heating system's wiring schematic
7. Clean and inspect a heating system
8. Install and service a heat pump system and an electrical heating system

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

SKILLSUSA CHAMPIONSHIPS
HEATING, VENTILATION, AIR CONDITIONING & REFRIGERATION RATING SHEET

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Proper use of tools and testing equipment	15								
Brazing	15								
Accuracy									
Quality and appearance									
Leaks									
Speed									
Locating and/or correcting malfunctions	60								
Written Test	10								
Oral Professional Assessment									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

INDUSTRIAL MOTOR CONTROL



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of industrial motor controls.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with industrial motor control as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All wiring panels, electrical supplies and materials as required by the problem assigned
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Diagonal pliers
 - b. Sidecutters
 - c. Long-nose pliers
 - d. Pump pliers
 - e. Wire strippers
 - f. Knife
 - g. Assorted flat blade and Phillips screwdrivers
 - h. Rule and measuring tape
 - i. Electrician's hammer
 - j. Hacksaw
 - k. Torpedo level
 - l. Electrical tape and connectors
 - m. Crimping tools
 - n. 1/2" EMT conduit bender
 - o. Multimeter
 - p. Latest edition of the *National Electrical Code* as of the January prior to the SkillsUSA Championships
 - q. Supplies for drawing ladder diagram (pencil, straightedge, etc.)
 - r. Calculator

Scope of Contest

1. Contestants will be given job sheets with schematic diagrams and accompanying requirements for wiring an industrial motor control installation.
2. All work must conform to the specifications of the latest edition of the *National Electrical Code* as of the January prior to the SkillsUSA Championships.
3. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: Associated Builders and Contractors Inc., Beacon Electric Co., Cutler Hammer Inc., Executive Electric, Hagen Electric, Independent Electrical Contractors Inc., Interstates Electric & Engineering Co. Inc., Kansas City Joint Apprenticeship and Training Center, Leading Edge Electrical Services, Mark T. McKean Builder, Minneapolis JATC, Pro Circuit Inc., Thess Inc., Zubras Electric Inc.

a. Safety

1. Application of shop rules and regulations
2. Correct use of electrical and hand tools
3. Techniques and practices of working on live equipment
4. Demonstrate proper grounding methods

b. Use of Tools and Equipment

1. Use of and dexterity with hand tools
2. Use and connection of electrical test equipment
3. Operation of special equipment (benders, KO punches, etc.)
4. Operation of electrical power tools
5. Operation of conduit cutting and reaming equipment

c. Calculations

1. Size branch circuit conductors
2. Size feeder conductors
3. Size control conductors
4. Size overcurrent protection for branch circuit
5. Size overcurrent protection for feeder circuit
6. Size overloads protection
7. Calculate conduit fill

d. Trade Information

1. Use and application of the *National Electrical Code*
2. Demonstrate the ability to draw wiring diagrams and ladder diagrams
3. Demonstrate the ability to interpret wiring diagrams and ladder diagrams

e. Install Raceways and Enclosures

1. Demonstrate the ability to mount enclosures according to specifications
2. Demonstrate the ability to bend and install raceways using the proper tools and supplies

f. Install and Connect

1. Disconnect switch
 2. Push buttons
 3. Selector switches
 4. Indicator lights
 5. Limit switches
 6. Control transformers
 7. Control relays
 8. Timing relays (all types)
 9. Contractors
 10. Motor starters
 11. Photoelectric switches
 12. Temperature control
 13. Counters
 14. Overload relays
 15. Solid-state motor starters
 16. Properly wire a dual-voltage motor
 17. Reversing motor starters
 18. Press-to-test pilot lights
4. The contestant, using the wiring diagram or the ladder diagram, will troubleshoot a control fault in the circuit using his or her multimeter and properly diagnosing the fault in a specified time limit.
 5. A written test, referencing the latest edition of the *National Electrical Code*, will be administered during the contestants' meeting.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
INDUSTRIAL MOTOR CONTROL RATING SHEET**

ITEMS EVALUATED	CONTESTANT NUMBER													
	POSSIBLE POINTS													
1. Safety	50													
2. NEC	50													
3. Box enclosure	50													
4. Conduit runs	50													
5. Neatness wiring	50													
6. Neatness JIC box	50													
7. Wiring connections	50													
8. *	50													
9. *	50													
10. *	50													
11. *	50													
SUBTOTAL	550													
Written test														
Oral Professional Assessment														
CLOTHING PENALTY (minus 0 to 5 percent of total possible points)														
TOTAL														

* Tasks determined annually by national technical committee



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of internetworking.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. **All:** Safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to all active SkillsUSA members enrolled in a computer networking training program, who meet the requirements as outlined below.

Equipment and Materials

Supplied by the technical committee:

- a. Computer workstation for the written portion of the contest.
- b. V.35 Cables, Cisco routers; and all other support or test equipment not specifically required for the contestant to furnish.

Note: Supplies and equipment lists for the Internetworking contest are reviewed and updated periodically. These lists will be posted in the SkillsUSA Championships April 15 Update annually at www.skillsusa.org/april.html.

Supplied by contestant:

- a. Personal résumé (submit via e-mail by June 1 to bschoenh@cisco.com)
- b. Copper cable terminating tools, DDB9 to RJ45
- c. Cable tester
- d. Laptop computer with Ethernet connection and COM port

Scope of the Contest

The contest will consist of three parts: a design problem, a written test and a hands-on evaluation.

Design problem — The purpose of the network design problem is to test a student's ability to design functionality, scalability, adaptability and manageability of an internetworking system. The problem will be designed annually by the National Internetworking Technical Committee. Committee membership includes: ADTRAN Inc., Cisco Learning Institute, Cisco Systems Inc., Communications Workers of America, Fluke Networks, Panduit Corp., Sigmanet and Southwestern Bell Data Communications.

Written evaluation—The purpose of the written portion of the contest is to test a student's complete knowledge of internetworking. Questions from the written evaluation will be taken from the following general internetworking topic areas:

- a. OSI model and industry standards
- b. Network topologies
- c. IP addressing, including subnet masks
- d. Networking components
- e. Basic network design
- f. Beginning router configurations
- g. Routed and routing protocols
- h. Advanced router configurations
- i. LAN switching theory and VLANs
- j. Advanced LAN and LAN switched design
- k. Novell IPX
- l. WAN theory and design
- m. WAN technology, PPP, Frame Relay, ISDN
- n. Network troubleshooting

Hands-on Evaluation

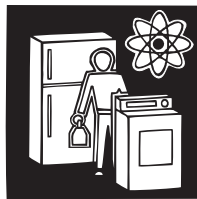
The purpose of the hands-on component of the contest will be to test a student's ability to design, install and maintain internetworks. Given a set of networking equipment (cable, fiber, hubs/switches routers, etc.) the student must, in a finite amount of time, install or repair a network and demonstrate that the installation properly runs Internet applications. Given a logical topology and network requirements, the students will be able to develop a usable network that meets or exceeds the documentation provided. The vision and context is that client companies would request a demonstration booth that runs a particular Internet application, and the student, given equipment and tools, would provide the appropriate connectivity for the application to run successfully.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
INTERNETWORKING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Structured Cabling (includes making cables and punching down)	15								
LAN Installation (includes IP addressing)	15								
LAN/WAN Design	15								
WAN Connection (includes router configuration)	15								
Troubleshooting (debug the installation)	15								
Written Test	15								
Professionalism (dress, behavior, attitude, client interaction/interview)	10								
SUBTOTAL	100								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

MAJOR APPLIANCE TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of major appliance technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with major appliance technology as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary appliances and special tools
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Tool box
 - b. 4" and 6" flat-blade screwdriver
 - c. Stubby flat-blade and Phillips screwdrivers, torx head screwdrivers — **no electric screwdrivers will be allowed**
 - d. Wire stripper
 - e. Diagonal pliers
 - f. Common pliers
 - g. Arc joint pliers
 - h. 1/4" drive socket set
 - i. Solderless terminal pliers
 - j. 12-oz. ball peen hammer
 - k. 8" adjustable wrench
 - l. Clip leads
 - m. Set of hex wrenches
 - n. Volt-ohm-millimeter
 - o. Flashlight
 - p. Swedging

Scope of the Contest

1. Contestants will demonstrate the ability to perform jobs and skills selected from the following list of competencies as determined by the SkillsUSA

Championships technical committee. Committee membership includes: Frigidaire Electrolux Home Products, General Electric Appliances, Maytag Consumer Services, Maytag Corp., United Servicers Association and Whirlpool Corp..

a. **Install, Service, Identify and/or Repair Malfunctions in the Following Major Household Appliances:**

1. Window air conditioner
2. Dishwasher
3. Electric oven
4. Electric range
5. Garbage disposal
6. Gas oven
7. Gas range
8. Heat pump
9. Microwave oven
10. Refrigerator
11. Washer-dryer
12. Water heater

b. **Service and/or Repair Controls Including:**

1. Auto burner control
2. Capillary sensor
3. Clock-timer
4. Digital component
5. Ignition controls (electric)
6. Ignition control (gas)
7. Switches/all types
8. Thermostats
9. Timer
10. Two-level selector switch
11. Warp switch
12. Fluorescent light circuits

c. **Test and Repair Electrical Systems Including:**

1. Capacitor
2. Fuse/breakers
3. Condensate pump
4. Condenser
5. Console light
6. Diode
7. Motors
8. Fused resistor
9. Heating element
10. Transformers
11. Light socket
12. Relays
13. Solenoid

d. **Service and Maintain Other Systems Including:**

1. Gas burners
2. Dispenser valve
3. Check valves
4. Couplings
5. Condenser
6. Evaporator
7. Filter
8. Hoses

9. Main gas valve
10. Regulator valve
11. Spray arm
12. Water inlet valve

e. Adjust the Following:

1. Cams
2. Door latch
3. Gas orifice
4. Mounting supports and pulley belts

f. Replace/Adjust the Following:

1. Agitator
2. Basket
3. Blower assembly
4. Circulation motors (exhaust, defrost, cooling)
5. Center post tub gasket
6. Door gasket
7. Door handle
8. Door latch cable
9. Door springs
10. Drive gear chain
11. Drive motors
12. Drum rollers
13. Drum support bearing
14. Blower wheel
15. Filter
16. Grinding chamber
17. Hinges
18. Ice tray
19. Impeller
20. Insulation
21. Pulley belts
22. Seals
23. Tub

g. Troubleshoot and Diagnose the Following:

1. Refrigeration system
2. Electrical system
3. Drive systems
4. Plumbing system

h. Leadership

1. Customer relations
 2. Job application and interview
2. Contestants will be rated on the proper use of tools and test equipment, speed, accuracy and safety. All standard industry safety practices will be followed.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
MAJOR APPLIANCE TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Locating and/or Correcting malfunctions										
1. Refrigerators										
2. Electric Ranges										
3. Microwaves										
4. Electric Dryers										
5. Washers										
6. Dishwashers										
7. Brazing										
8. Written test										
Customer Relations										
Job Interview										
SUBTOTAL										
CLOTHING PENALTY (minus 0 to 5 percent of total points)										
TOTAL										

MARINE SERVICE TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of marine service technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA light blue work shirt and navy pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with marine service technology as an occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary engines, engine parts, work benches, test stands, gasoline and oil, and specialized tools
 - b. Industry manuals, including service and repair instruction manuals
 - c. All necessary information and furnishings for judges and technical committee
 - d. All tools required for contest are supplied by the technical committee.

Scope of the Contest

1. Contestants will demonstrate their abilities on a variety of products commonly found in the United States selected from the following competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes American Suzuki Motor Corp., American Marine Institute, Mercury Marine, Volvo Penta of the Americas and Yamaha Motor Corp., USA.
 - a. General Shop Practices
 - b. Maintain and Repair:
 1. Cycle gasoline engines
 2. 4-cycle diesel engines

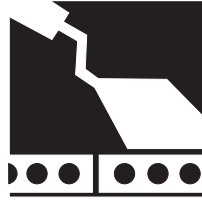
3. 2-cycle outboard engines
 4. Electrical systems
 5. Cranking systems
 6. Ignition systems
 7. Charging systems
 8. Fuel systems
 9. Cooling systems
 10. Lubrication systems
 11. Power transfer systems
 12. Drive systems
 13. Stern drive applications
 - c. Service and repair boat and trailer rigging
 - d. Service and repair boating accessories
 - e. Assemble and maintain outboard lower units and housing assemblies
 - f. Use marine woods, metals and fiberglass
 - g. Adjust and repair trailers
 - h. Prepare and deliver sales merchandise
 - i. Demonstrate employability skills
2. Judging criteria and points assigned will be determined by the difficulty of the tasks assigned.
 3. Contestants will be judged on accuracy (in comparison with factory specifications), workmanship (proper use of tools and equipment), safety practices and speed.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
MARINE SERVICE TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Written Test									
Oral Professional Assessment									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

MASONRY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of masonry.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with masonry or bricklaying as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Tenders
 - b. Hose
 - c. Three 55-gallon water drums
 - d. Mortar pans, boards, pails, wheelbarrows
 - e. Hoes
 - f. Square-nosed, short-handled shovels
 - g. Sand
 - h. Masonry mix or ready-mixed mortar
 - i. Resin paper or suitable area covering
 - j. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. One trowel
 - b. Two levels (24" and 48")
 - c. One "S" jointer
 - d. Long jointer
 - e. One brick hammer
 - f. Two 6-foot folding rules (one modular, one standard)
 - g. One carrying bag
 - h. One pencil
 - i. One square
 - j. One brush
 - k. One brick chisel
 - l. Line and line blocks

Scope of the Contest

1. Contestants will construct a project or wall system using brick or brick and block, according to project specifications and drawings, within an allotted period of time.
2. Contestants will be rated on skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: Arizona Masonry Contractors Association, Bon Tool Co., Brick Industry Association, Hanley-Wood LLC, Marshalltown Co., Mason Contractors Association of America, Masonry Institute of Tennessee, National Concrete Masonry Association, Portland Cement Association, Southern Brick Institute, SPEC MIX Inc. and Wasco Inc.
3. Basic skills will consist of the following:
(* Considered essential competencies
** Should be mastered at the journeyman level
All other items are considered supplemental)

a. Know and Understand Brick Masonry Techniques

- *1. Choose proper tools and materials
- *2. Perform work in a reasonable amount of time as determined by the instructor and/or industry standards
- **3. Lay-up masonry products in an accurate and professional manner
- *4. Load and unload materials as directed
- *5. Clean up work areas properly and thoroughly

b. General Safety

- *1. Demonstrate appropriate safety precautions when performing all tasks
- *2. Demonstrate awareness of potential hazards when performing all tasks
- *3. Accept responsibility for the safety of other workers
- *4. Keep work areas neat and organized
- *5. Wear proper safety equipment and clothing
6. Follow prescribed OSHA standards

c. Hand Tools and Equipment

- *1. Cut masonry safely around others
- *2. Place mortar cautiously in the mortar pan or on the mortar board
- *3. Keep tools out of the paths of other people working on the job
- *4. Handle tools properly

d. Hand Tool Identification and Usage

- *1. Identify basic hand tools used in brick masonry
- *2. Demonstrate an understanding of the specific uses of each hand tool

- *3. Practice the safety rules for each hand tool
 - *4. Identify quality tools
 - *5. Store and care for hand tools
 - e. Measuring Tools**
 - *1. Use and maintain a modular ruler and a spacing ruler
 - 2. Set and use a story pole
 - f. Power Tool Identification and Usage**
 - *1. Identify the power tools used in brick masonry
 - *2. Demonstrate the specific uses of each power tool
 - *3. Practice the safety rules for each power tool
 - 4. Maintain power tools
 - *5. Set up power tools correctly
 - g. Equipment**
 - *1. Identify equipment generally used in brick masonry
 - 2. Correctly use each piece of equipment
 - 3. Store, maintain and repair all equipment
 - 4. Inspect, assemble, disassemble rigging and scaffolding properly
 - h. Masonry Levels**
 - **1. Use a 24" and 48" level for plumbing and leveling
 - *2. Care for and maintain a level
4. **Fundamental Theory in Brick Masonry**
- a. Trade Terminology**
 - **1. Identify terms used in brick masonry
 - **2. Demonstrate ability to verbalize using trade terminology
 - b. Basic Math**
 - *1. Add, subtract, multiply and divide with whole numbers, decimals and fractions
 - *2. Figure proportions to mix masonry materials according to specifications
 - *3. Compute percentages to estimate and determine material requirements, work performed, schedules and costs
 - *4. Express answers relative to the trade
 - c. Blueprint Readings**
 - *1. Read basic drawings and sketches and understand the information contained in them
 - *2. Know the meanings of basic architectural symbols and abbreviations
 - *3. Use a builder's level relative to a benchmark
5. **Materials and Methods**
- a. Brick Masonry Materials**
 - *1. Arrange masonry materials for efficient use
 - *2. Place mortar pans properly
 - *3. Temper or shake-up mortar with proper shovels
 - b. Hod-carrying**
 - *1. Arrange masonry materials for efficient use
 - *2. Place mortar pans properly
 - *3. Temper or shake-up mortar with proper shovels
 - c. Trowel Usage**
 - **1. Manipulate a trowel properly
 - **2. Cut and roll, and cut and cup mortar to load trowel properly
 - **3. Spread and furrow mortar properly
 - d. Preparation of Mortar**
 - *1. Follow correct safety practices when mixing mortar
 - *2. Proportion mortar ingredients for specific mixes
 - *3. Mix mortar manually with hoe and mortar box
 - *4. Mix mortar with a mortar mixer
 - e. Bonding Methods**
 - *1. Demonstrate knowledge of different types of bonding used in masonry construction
 - **2. Lay out bond
 - **3. Determine coursing
 - f. Tooling and Pointing Joints**
 - **1. Tool concave joints
 - 2. Tool rake, weather, V-jointer, grapevine and struck joints
 - 3. Cut/rough joints
 - *4. Tuck-point a wall
 - **5. Brush and touch-up wall
 - g. Cleaning Brick and Structural Tile**
 - *1. Follow correct procedures for keeping masonry work clean
 - *2. Follow correct procedures in cleaning brick and structural tile
 - *3. Follow correct procedures for rubbing and tuck pointing concrete block and slag block
 - 4. Clean and tuck-point stonework
6. **Brick and Block Laying**
- a. Lay Straight Brick Wall**
 - *1. Lay brick at the rate of 75-100 brick per hour
 - **2. Attach a line block and line pins to a wall
 - **3. Set a trig
 - **4. Lay brick to a line while holding bond
 - **5. Throw a full head joint
 - b. Lay Straight Block Wall**
 - *1. Spread bedjoints and throw on full headjoints for block units
 - *2. Lay block units to the line
 - c. Building the Brick Corner**
 - *1. Lay out a wall in preparation for building a brick corner
 - *2. Construct a rack-back lead
 - *3. Construct an outside and inside corner lead (+ or - 1¹/₁₆")

d. Lay the Block Corner

- *1. Lay out a wall in preparation for building a block corner
- *2. Install wire reinforcement in bed joints
- *3. Build a block corner to a specified height

e. Lay Brick Veneer Wall

- 1. Determine type of brick to be used
- *2. Bond the wall
- *3. Scale each course
- *4. Lay brick in mortar to scale
- *5. Secure wall with ties at desired intervals
- *6. Point and joint the wall

f. Lay Brick Masonry Cavity Wall

- *1. Determine width of cavity and type of brick to be used
- *2. Construct components of the wall in the proper sequence
- *3. Spread mortar to achieve the required bond without getting mortar into the cavity
- **4. Install wall ties which join the exterior and interior wythes together into a single cavity wall
- **5. Install flashings and construct weep holes in a manner that permits effective drainage of moisture from cavity
- **6. Construct and maintain the cavity during construction so that the air space provides insulation

g. Lay Single Wythe Brick

(Load-bearing wall using units that are a minimum of 5" wide)

- 1. Determine type of brick to be used
- *2. Bond the wall
- *3. Scale each course
- *4. Lay brick in mortar to scale
- **5. Secure wall with ties at desired intervals
- *6. Point and joint the wall

h. Lay a Brick and Block Composite Wall

- 1. Determine type of brick and block to be used
- *2. Bond the wall
- *3. Scale each course
- *4. Lay brick and block in mortar to scale
- *5. Secure wall with ties at desired intervals
- *6. Point and joint the wall

i. Fireplaces and Chimneys

- 1. Identify various components of a fireplace
- 2. Build a fireplace according to plans
- 3. Identify various components of a chimney
- 4. Build a one-flue chimney from given plans

j. Arches, Columns and Piers

- 1. Demonstrate knowledge of architectural features including aesthetic trims, course designs, period and antique applications
- 2. Construct an arch using given plans
- 3. Construct a column using given plans
- 4. Construct a pier using given plans

k. Floors, Pavers and Stairs

- 1. Lay floors according to given plans
- 2. Lay pavers according to given plans
- 3. Lay stairs according to given plans

7. Concrete Work

a. Footer Preparation

- 1. Lay out footings properly
- 2. Place rebar properly
- 3. Place and rough finish concrete properly

b. Foundations

- 1. Lay out and establish grades for foundation
- *2. Establish corners and lay out concrete block according to specific bonding plan
- 3. Lay foundation wall to joist and brick shelf height
- 4. Waterproof foundation wall
- *5. Install flashing, anchor bolts, termite shield and weep holes

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
MASONRY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Measurements	20								
Level	20								
Plumb	20								
Tooling and Neatness	20								
Correct Design	20								
Square and Range	20								
Manipulation	20								
Full and Uniform Joints	20								
Production	20								
Written test	20								
Oral Professional Assessment									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									



Purpose

To evaluate each team's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of Mechatronics. Mechatronics is a career and educational discipline that combines the industrial skills of mechanics, electronics and computer-based controls with a team-oriented approach to problem solving. Skilled Mechatronic technicians are required for the maintenance, repair and operation of modern automated manufacturing systems.

First, refer to General Regulations, Page 9.

Clothing Requirements

Official khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in Mechatronics technology programs as the occupational objective. Where this program is not yet available, students may compete if they are enrolled in industrial electricity, fluid power technology, programmable controls (PLC) technology or industrial automation programs.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All specialized tools, materials and equipment needed to compete in contest
 - b. 24VDC, 3A power supply
2. Supplied by contestants:
 - a. Tool box or tool pouch and belt
 - b. Digital multimeter and test leads. Probes are required, and alligator test leads may be useful as well. The device should be capable of checking continuity, measuring resistance, DC voltage up to 30 VDC, and DC current up to 1A.
 - c. Set of Phillips screwdrivers
 - d. Set of slotted screwdrivers
 - e. Allen (hex key) wrench set in both metric and English sizes
 - f. Needle nose pliers
 - g. Diagonal cutting pliers
 - h. Slip joint pliers
 - i. Vise-grip (locking) pliers

- j. Combination square with level vial in head, 12" rule, min.
- k. 8-foot or longer measuring tape with English and Metric scales
- l. Small inspection mirror
- m. Two each—clean cloth (wiping) shop towels
- n. Two sharpened pencils
- o. Terminal-crimper Ideal 30-428 or equivalent
- p. Wire stripper(s), for wire sizes 24-16 AWG
- q. Hand-held calculator (optional)
- r. Notepad (size optional)

In addition to the previous list, the following are supplied by college/postsecondary contestants only:

One (1) PLC Assembly, wired to contest specifications. (These specifications appear in Appendix A, at the end of this contest description.)

Scope of the Contest

The contest will be a team-oriented event. Teams will consist of two contestants from the same school in the same division.

1. The contest will consist of various tasks selected from the following list of competencies as determined by the SkillsUSA Championships Technical Committee. Committee membership includes FESTO Corp.
 - a. Teams can freely choose who does each task(s) separately or together.
 - b. Resistance, voltage and current test electrical equipment
 - c. Install, adjust and troubleshoot Programmable Logic controllers and systems
 - d. Select and install threaded fasteners
 - e. Perform precision measuring on mechanical components
 - f. Install, service, adjust and troubleshoot pneumatic and hydraulic systems
 - g. Install, adjust and troubleshoot electro-pneumatic and electro-hydraulic systems
 - h. Read construction, electrical and mechanical blueprints
2. Contestants will be rotated through identical stations with time limits determined by the national technical committee.
3. The judging criteria and the points assigned will be determined by the difficulty of the task assigned.

Contest Organization:

The competition will consist of one or more of the following four activities:

a. Build to Print

Teams will be required to build a Mechatronic system according to printed directions and drawings. The system shall consist of mechanical, pneumatic, electrical and electronic components that must be assembled, tubed, wired, adjusted and tested for proper system operation. Contestants will be judged for accuracy and neatness, as well as general interdisciplinary

nary knowledge of the individual technologies and how they interact in an integrated system. This will be a timed event. In order to successfully compete, teams must have demonstrated abilities in the following areas:

1. Interpret mechanical drawings, electrical circuit diagrams and pneumatic circuit diagrams (e.g., “blueprints”). Note: Contestants should be familiar with ISO symbol standards for electrical and pneumatic circuits
2. Install, adjust and troubleshoot mechanical, pneumatic, electro-pneumatic and electrical systems and components
3. Installation of a pre-programmed PLC will be a part of the competition, at the high school level. It is not necessary for high school contestant to program this unit, or employ on-line diagnostics. However, knowledge in this area will be helpful. College/postsecondary contestants will be required to program their PLCs

b. System Troubleshooting

Teams will be required to systematically troubleshoot and repair a Mechatronic system according to printed documentation that describes proper system operation and all documentation.

The system will be pre-assembled and wired, and consist of mechanical, pneumatic, electrical and electronic components that have been modified to prevent proper operation. Contestants must use carefully defined service procedures that will ensure safety and systematic methods. Contestants will be heavily penalized for incorrectly identifying good parts as bad, in order to discourage haphazard “troubleshooting by substitution.” Students will be judged for accuracy and neatness, as well as general interdisciplinary knowledge of the individual technologies and how they interact in an integrated system. This will be a timed event. In order to successfully compete, teams must have demonstrated abilities in the following areas:

1. Interpret mechanical drawings, electrical circuit diagrams and pneumatic circuit diagrams (e.g., “blueprints”). Note: Contestants should be familiar with ISO symbol standards for electrical and pneumatic circuits.
2. Install, adjust, troubleshoot and understand the operational principles of mechanical, pneumatic, electro-pneumatic and electrical systems and components.

c. Written Exam

This exam, consisting of between 50 and 100 multiple-choice questions, will measure the

contestant’s general knowledge of Mechatronics technology. Questions will cover a variety of situations pertaining to Mechanics, Industrial Electricity, Fluid Power systems (pneumatic and hydraulic) and Programmable Controllers (PLCs).

d. Oral Exam

Contestants will be required to give verbal explanations to their appointed judge regarding the operation and behavior of Mechatronic systems or sub-systems. For example, the judge will give a circuit diagram to the contestant, and ask pertinent questions. In addition to technical subject knowledge, contestants will also be judged on their ability to communicate with clarity and accuracy.

APPENDIX A: Requirements for College/Postsecondary Team Supplied PLC Assemblies:

Teams competing at the college/postsecondary level will be required to write a PLC program. This necessitates each college/postsecondary team to provide its own PLC assembly and programming device/software (e.g., laptop computers or hand-held programming devices). The PLC assembly must meet the following requirements:

1. Power Supply: The PLC must be capable of operation at 24VDC, or 120VAC.
All 120VAC units must be wired, ahead of time, to an in-line Ground-Fault Interrupter device and standard (NEMA 5-15P) 120VAC line cord. All 120VAC wiring must meet PLC manufacturer’s requirements and follow standard industry practice. Judges reserve the right to disallow the use of any contestant-supplied equipment that presents a safety hazard. No line cords or 120VAC wiring devices will be supplied at the contest.
2. PLC shall have a minimum of 12 digital inputs and 8 digital outputs.
3. Inputs shall be 24VDC Sinking (Inputs shall be activated by application of a +24VDC signal to the input terminal)
4. Outputs shall be 24VDC Sourcing (Outputs shall supply a +24VDC signal to the load when activated). All loads will be returned to ground. Output capacity shall be no less than 0.5A, each.

No Analog I/O will be required.

Terminal Blocks and wire will be provided by the technical committee. Contestants will wire their PLC I/O points to these blocks, per instructions given out at the time of the contest.

**SKILLSUSA CHAMPIONSHIPS
MECHATRONICS RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Build to Print									
System Troubleshooting									
Written Exam									
Oral Exam									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

MOTORCYCLE SERVICE TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of motorcycle service technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA light blue work shirt and navy pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in career and technical programs that include motorcycle service technology as an occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary tools, equipment, supplies and publications for the contest.
 - b. All necessary information and furnishings for judges and technical committees.

Scope of the Contest

1. Contestants will demonstrate their ability to perform jobs or skills selected from the following lists of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: Buell Motorcycle Co., Harley-Davidson Motor Co. Inc., Motorcycle Mechanics Institute, Snap-on Inc. and Yamaha Motor Corp., USA.
2. Major Areas of the Contest
 - a. **Shop Procedures**
 1. Use microfiche to identify part numbers of specified parts
 2. Use and read service manuals to find specifications and procedures
 3. Use proper techniques in the care and use of equipment
 4. Use proper safety procedures
 5. Fill out repair orders

b. Engine/Drive Train Condition

1. Determine engine condition by performing a cylinder leakdown and compression tests
2. Use dial bore gauges, micrometer and feeler gauges to determine the condition of cylinders, pistons, rings and other engine parts
3. Remove, measure and reinstall clutch components
4. Adjust valve clearance of screw-type and shim (pad) type valves
5. Diagnose, service and repair chain and sprocket and/or shaft driven type final drive systems

c. Carburetion

1. Remove and disassemble carburetor, adjust the float, identify components, reassemble and reinstall carburetor
2. Inspect, service and reinstall an oil-foam air filter
3. Synchronize carburetors

d. Wheels

1. Inspect, repair and service tubeless tires (street and ATV type)
2. Inspect, repair and service tube tires
3. Diagnose, service and repair disc and drum brake systems
4. Measure radial and lateral runout of a rim using a dial indicator true spoke wheel
5. Static balance wheel

e. Routine Inspection and Maintenance

1. Inspect, service and replace cables
2. Inspect, service and reinstall crankcase breather
3. Inspect fluid levels
4. Adjust ignition timing

f. Electrical Inspection

1. Use a multimeter to measure and diagnose resistance of specified components, amperage drain key off and on, battery voltage key off and key on, charging voltage and amperage. Locate and repair other electrical problems
2. Inspect ignition timing
3. Contestants will take a written test administered by the technical committee.
4. Contestants will be tested on a variety of motorcycles, ATVs and scooters commonly found in the United States using both metric and American threads/wrenches.
5. Contestants will be judged on accuracy, proper use of tools and equipment and safety practices. Speed is judged only in the event of a tie. Rating sheets will reflect each specific skill requirement as determined by the national technical committee.

SKILLSUSA CHAMPIONSHIPS MOTORCYCLE SERVICE TECHNOLOGY RATING SHEET

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Additional resources are available online. “Contest Singles” include prior year’s contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

NAIL CARE



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of nail care.

First refer to General Regulations, page 9.

Clothing Requirement

For men: Official white work shirt, black dress slacks, black socks and black leather work shoes.

For women: Official white top, black dress slacks, black socks or black or skin-tone hose and black leather work shoes. **For models:** Businesslike, white, collarless blouse, black dress slacks or skirt, black or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with cosmetology/nail care as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:

- Anti-microbial cleanser (for pre-cleaning hands of contestant model)
- Hand sanitizer (for use by contestant and model)
- Disinfectant tray system with solution (for implements)
- Disinfectant/sanitation surface spray (for work environment)
- Technical guidelines for the specific applications required to be performed
- Disposable table towels
- Plastic bags, gallon size, for disposal of refuse
- One electrical outlet per contestant
- Safety glasses for contestant and model

2. Supplied by the contestant:

- White terry towels. No holes or stains allowed
- Water bottle dispenser
- All items necessary to complete five sculptured acrylic nails. **Note:** Dappen dishes must have covers; monomer, polymer and primer must be from the same manufacturer; two of the four basic acrylic colors (pink, white,

clear or natural) must be used to complete two-tone/french manicure sculpted nail

- All items necessary to complete five tip and wrap nails. **Note:** Only fiberglass or silk fabric can be used; activator/catalyst, resin/adhesive and fiberglass or silk must be from the same manufacturer
- Dark red crème lacquer/polish
- All items necessary to complete flat-paint nail art application. **NOTE:** Supplies are limited to polish, lacquers, paints and sealer (see "Items Not Allowed" below)
- Written description of the nail art theme. **Note:** Due at registration
- Portable kit organizer (to transport all items necessary for the contest)
- Manicure table lamp and electrical extension cord if contestant needs additional lighting

3. Items Not Allowed:

- Nail Art accessories: gems, skins, feathers, rhinestones, glitters, threads, fabrics, foils, beads, tapes, jewelry, air brushing, decals/stencils or cast moldings
- Free-edge or 1/2 well tips
- Tip blenders
- Top coats or base coats. **Note:** Sealer is allowed for nail art application only
- Electric files/drills

Scope of the Contest

Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the national SkillsUSA Championships technical committee. Committee membership includes Backscratchers, OPI Products Inc., and Poshe/Almell Products, Ltd.

1. Initial Preparation

Prejudged before the start of the contest site. The following will be evaluated:

- Table setup—can only consist of items needed for the specific contest application in progress (i.e., if sculptured in progress, the tip & wrap and nail art materials should not be visible during this time. Time will be allowed between each contest to reset table)
- All products and solutions must be properly identified with the manufacturer's original packaging and labeling and cannot be defaced
- Required tools and products must be accounted for and professionally organized
- No jewelry is to be worn by the model during the competition

2. Oral Professional Development Assessment

A 3–4 minute presentation of the benefits of Natural nail care. You can direct your presentation to the judges as if they were a client who came to you for a consultation. The presentation should cover the following points.

- Recommended natural nail care services
- Results the client should expect
- The home care products the client would need to purchase and use to obtain these results

3. Acrylic Application

One hour allotted. All five fingers of the model's right hand are to be sculpted with forms, no tips, using the two-tone/french manicure technique. The following will be evaluated:

- Initial degree of difficulty: based on condition and characteristic of natural nails
- Acrylic application: product control, clarity/no bubbles, smile line, c-curve, arch, thinness and continuity
- Finished appearance: smoothness, shape and length consistent and proportionate to hand; high-gloss shine and cuticle involvement

4. Tip and Wrap Application

One hour allotted: All five fingers of the model's left hand are to have nail tips applied and blended and overlaid with a wrap system. The following will be evaluated:

- Tip application: fit, alignment and blending
- Fabric application: placement
- Resin/adhesive application: product control, even coverage of fabric and thinness
- Finished appearance: clarity, smoothness, shape and length consistent and proportionate to hand, high-gloss shine and cuticle involvement

5. Lacquer/Polish Application

One-and-a-half (1.5) hours allotted for lacquer and nail art application. Two coats of dark red creme lacquer/polish is to be applied to the model's right hand. The following will be evaluated:

- Neatness, coverage, evenness and cuticle involvement

6. Flat Nail Art Application

One-and-a-half (1.5) hours allotted for lacquer and nail art application. Nail art is to be applied to all five fingers of the model's left hand. A specific theme is to be carried through on all five fingers and in a written description. Contestant must have written and submitted a description of the theme they intend to create at registration. Diagrams of the art you intend to create can also be

used. All nail art must be created using polishes, lacquers or paint *only*! The following will be evaluated:

- Creativity; theme, follow-through of theme, artist expression and color coordination.
- Level of difficulty; complexity of design
- Precision; neatness and clarity of lines

7. Written Examination: 30 minutes

Test will consist of 50 multiple-choice questions covering all aspects of nail care.

8. Professionalism and Organizational Skills.

The following will be evaluated:

- Cleanliness and organization of the working environment
- Sanitation and safety procedures followed throughout the contest
- Communication and listening skills

Contest Rules

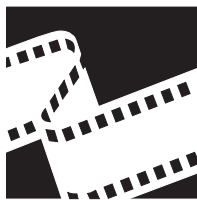
- After they have been seated in the competition area, contestants are not permitted to touch their models until the competition begins.
- All contestants must bring a model for the competition.
- Time limits: one hour for acrylic; one hour for tips and wrap, one-half hour for written examination and one-and-a-half hours for polish and flat nail art applications. All segments of work must be completed in the specified time during competition. (For example, during the tip and wrap segment, no work may be completed or started on the sculptured, nail art or polish application.)
- Disqualification or penalty points taken can occur for the following:
 - Any rule not followed, with NO exceptions!
 - Leaving competition area before completion of model (applies to both contestant and model) without proper escort
 - Unauthorized use of a product that is not allowed or that doesn't appear in the above listing.
 - Any product that appears to have been altered
 - Talking during competition
- Time will be used as a tiebreaker only.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
NAIL CARE RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Initial preparation	10									
Oral Professional Development Assessment	30									
Acrylic Application	65									
Tip and Wrap Application	65									
Lacquer/Polish Application	20									
Flat Nail Art Application	50									
Written Examination	50									
Professionalism & Organizational Skills	10									
SUBTOTAL										
Clothing Penalty (minus 0 to 5 percent of total points)										
TOTAL										

PHOTOGRAPHY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of (still) photography.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with photography as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. Except for those items listed below, which are to be supplied by the contestant, the technical committee will provide all other equipment and supplies as needed
2. Supplied by the contestant:
 - a. Digital SLR camera (mandatory) plus any photographic equipment desired by the contestant to complete the on-location photography segment of the competition. **Note:** The on-location segment *will* include a section on outdoor portraiture. Contestants should bring whatever equipment they feel they will need for the field assignment (bear in mind that contestants must carry it.)
 - b. USB reader for memory card used in personal camera (i.e., compact flash, microdrive, Secure Digital, Memory Stick, etc.)
 - c. Pen or pencil
 - d. One stainless steel film developing tank
 - e. One strip of 35mm film approximately the same length as a 36-exposure roll of film. This may be scrap film, unexposed film or even a previously processed roll of negatives or slides. For contestants' own benefit, we recommend this film be in as pristine a condition as possible, since film which has

been previously kinked is much more difficult to load.

- f. Students will be required to set up specified lighting ratio in a studio setting. Electronic flash meters will be available, but flash meters vary greatly from manufacturer to manufacturer, so if students have access to a particular model with which they are familiar, it is *strongly* encouraged they bring it.
- g. Tripod
- h. Electronic flash (battery powered)

Scope of the Contest

1. Contestants will demonstrate their ability to perform tasks selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: Bartz Photography, The Image Group, Mamiya USA, The Professional Photographers Association of Greater Kansas City, and The Portrait Gallery.

a. Safety

1. Demonstrate safe work habits as applied to self and fellow workers, environment, tools and equipment

b. Equipment and Lighting (Portrait and Commercial)

Demonstrate knowledge of and ability to use the following:

1. 35mm, medium and large format cameras
2. Both natural and artificial light sources
3. Professional studio lighting equipment
4. Single and multiple light sources (flash, incandescent and natural light)
5. Hand-held and built-in light meters
6. Various exposure control systems
7. Lighting patterns and ratios
8. Filters for black-and-white and color photography
9. Various focal lengths of lenses and their characteristics

c. Films, Processes and Presentation

Demonstrate knowledge and ability to perform the following:

1. Characteristics and uses of, as well as processing and printing:
 - a. Black-and-white, color negative and color reversal films in all sizes, 35mm, 120 and sheet
2. Panchromatic films
3. Orthochromatic films
4. Infrared film
5. High contrast copy film
6. Rating of film speeds
7. Black-and-white experimental techniques
8. Dichroic filters for black-and-white and color printing
9. Variable contrast filters for black-and-white printing

10. Toners
11. Automated print processing equipment and tray processing
12. Use of stainless-steel film developing reels and tanks
13. Resin coated (RC) and fiber-based enlarging papers
14. Digital imaging techniques
 - a. All aspects of digital capture, image manipulation, development of effective workflow, image output and digital file storage
 - b. Use of Adobe Photoshop
 - c. Digital imaging terminology
 - d. Color management and the use of profiles
 - e. Computer monitor calibration
15. Black-and-white and color processing chemistry
16. Processing temperature control devices
17. Determining proper print exposure
18. Use of print manipulation (such as dodging or burning-in)
19. Use of different lenses for enlarging various formats
20. Print spotting, using dyes and/or pencils
21. Mounting, matting and framing
22. Use of proper print presentation techniques

2. **Print Competition**

Each student will submit two photographs to be judged and displayed at the competition. Requirements for prints are as follows:

Each print is to be mounted on an appropriate photographic mounting material, measuring 16"x20." The total thickness of the finished piece may be no thinner than 1/8" inches and no thicker than 3/16" inches. Prints may be no smaller than 80 square inches, (e.g., an 8"x10" is 80 square inches) or as large as 16"x20". All prints, however, must be mounted to a finished size of 16"x20". Prints may be matted or not as the maker chooses, but overall presentation will be a factor in judging. All prints must be identified by a label placed on the back with the following information: maker's name, instructor's name, school name and address, and high school or college/postsecondary designation. This information should be printed in large, clear, legible writing and affixed to the back of the print, near the center of the top edge.

These prints must be brought to the Tuesday meeting. Prints received after this time will not be accepted.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
PHOTOGRAPHY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Print Judging: Judging of photographic prints submitted by contestants	10									
Written test	25									
Field Assignment: Includes posing, lighting, composition and exposure	25									
Studio—Portrait and Commercial: Portrait section includes: portrait studio lighting, light metering Commercial section includes: view camera movements, film loading, focus	25									
Films and Processes: Includes film handling, troubleshooting of printing and processing problems, color balance and dust spotting	15									
SUBTOTAL	100									
Oral Professional Assessment										
Clothing Penalty (minus 0 to 5 percent of total points)										
TOTAL										



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of residential plumbing.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA light blue work shirt and navy pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with residential plumbing as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary supplies and appliances required for the project
 - b. All necessary information and furnishings for judges and technical committee
 - c. Tank and tips will be provided
2. Supplied by the contestant:
 - a. 8' steel tape measure
 - b. Copper tubing cutter with reamer
 - c. Striker
 - d. Arc joint pliers (channel lock type)
 - e. 8" or 10" adjustable wrench
 - f. Set of assorted slotted and Phillips screwdrivers
 - g. Torpedo level
 - h. 14-16 oz. claw hammer
 - i. Plastic (P.V.C.) pipe reamer or suitable knife
 - j. Suitable saw or shear to cut P.V.C. pipe
 - k. Small can solder flux or paste, 1/2-lb. roll solder and solder paste brush
 - l. Copper cleaning tool (inside and outside)
 - m. Roll of plumbers' emery cloth
 - n. 12" architect's scale
 - o. 2H pencil and eraser
 - p. 12" straightedge or drafting triangle
 - q. Cutters suitable for cast-iron soil pipe
 - r. Torque wrench for no-hub clamps

- s. Straight tin snips
- t. 5/16" nut driver
- u. Hacksaw
- v. 3/8" drive socket set
- w. Portable battery screw gun
- x. Plumb bob

Scope of the Contest

1. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: Anthony Plumbing-Heating-Cooling, Atomic Plumbing and Drain Cleaning, Cast Iron Soil Pipe Institute and Copper Development Association Inc.

a. Tools and Equipment

1. Basic Hand Tools
 - a. Measure lines to the nearest 1/16" of an inch with a rule/tape measure
 - b. Identify and use common hand tools basic to the plumbing trade
2. Power Tools
 - a. Attach various hangers on concrete, metal and wood walls
 - b. Cut out an opening in plywood or wood for various pipes and fixtures
 - c. Thread steel pipe with a power-driven thread cutter
3. Equipment
 - a. Light and adjust the air-acetylene torch
 - b. Set up and adjust the builder's level
 - c. Set up and light a propane furnace
 - d. Set up an inflatable rubber test plug in a pipe
 - e. Set up a mechanical test plug in a pipe

b. Blueprints, Measurements and Calculations

1. Blueprint Reading
 - a. Read the architect's scale
 - b. Develop an isometric sketch of a drainage system
 - c. Determine measurements from a manufacturer's specifications
 - d. Determine rough-in locations
 - e. Establish grade lines for installing plumbing
 - f. Convert weight (mass) measurements from English system to metric system

c. Systems Rough-In

1. Drainage Systems
 - a. Label a cross-section of a P-trap
 - b. Identify fittings required on a drainage system
 - c. Install bathtub waste overflow and trap

- d. Calculate the slope required for building sewer lines
- e. Install soil or waste back vents
- f. Install cleanouts on drains
- g. Rough-in waste lines and vents for built-in lavatories
- h. Rough-in waste lines and vents for bathtubs
- i. Secure horizontal and vertical lines of pipe to wood, metal and masonry surfaces
2. Water Systems
 - a. Make an isometric drawing of a hot and cold water system for a two-story house
 - b. Determine pipe sizes for a hot and cold water system for a two-story house
 - c. Rough-in water supply lines for bathtubs
 - d. Rough-in water supply lines for water closets
 - e. Rough-in water supply lines for water heaters
 - f. Make water pressure tests on water supply systems
3. Joining Pipes
 - a. Cut, ream, thread and join steel pipe
 - b. Measure, cut and join cast iron pipe to a cast-iron fitting using the caulking method
 - c. Join cast iron pipe to a cast iron fitting using a no-hub joint
 - d. Join cast iron pipe to a cast iron fitting using a compression joint
 - e. Cut, ream and join copper tubing using the sweat method
 - f. Cut, ream and join copper tubing using a compression joint
 - g. Cut, ream and join copper tubing using a flare joint
 - h. Join cast iron pipe to a P.V.C. pipe using a no-hub joint.
 - i. Join cast iron pipe to a P.V.C. pipe using a P.V.C. adapter
 - j. Join P.V.C pipe to P.V.C. fittings
4. Pipe and Pipe Fittings
 - a. Read fitting sizes
 - b. Identify fittings from a sketch of a piping system
 - c. Construct a materials take-off list from an isometric drawing

d. Residential Systems

1. Compute the cost for plumbing supplies
2. Perform leak tests on various piping systems

e. Fixture and Appliance Installation

1. Water Valves and Faucets
 - a. Install a kitchen sink faucet
 - b. Install a dual control lavatory faucet with pop-out drain plug
 - c. Disassemble and reassemble a single kitchen sink faucet
2. Drainage Connections
 - a. Install a cast iron water closet flange
 - b. Install a plastic water closet flange
 - c. Install a lavatory trap
 - d. Install a kitchen sink trap
3. Fixtures and Appliances
 - a. Install a water closet (floor mount)
 - b. Install a lavatory (wall hung type)
 - c. Install a bathtub
 - d. Install an electric water heater
 - e. Install a dishwasher
 - f. Install a garbage disposal unit
 - g. Install a gas water heater

f. System Maintenance and Repair

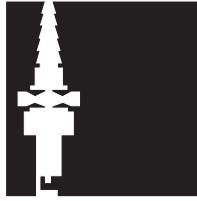
1. Water Systems Maintenance and Repair
 - a. Replace a section of galvanized water supply line
 - b. Thaw a frozen pipe with a plumber's torch
 - c. Repair a leaking water faucet or valve
 - d. Repair a leaking shower valve
 - e. Repair a ball cock on a water closet
 - f. Insulate water lines
2. Drainage Systems Maintenance and Repair
 - a. Replace a lavatory trap
 - b. Clear obstructions from a lavatory drain
 - c. Clear obstructions from a water closet drain
 - d. Clear obstructions from a main drain line
2. All piping will be visually inspected and may be tested for leaks.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
PLUMBING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
DWV									
Accuracy	100								
Installation	100								
Grade	50								
Alignment	50								
Supports	100								
Fixtures	100								
COPPER									
Accuracy	100								
Installation	100								
Plumb	50								
Joint Preparation	50								
Solder Joint	100								
NEATNESS	100								
SAFETY	50								
WRITTEN TEST	150								
ORAL PROFESSIONAL ASSESSMENT									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

POWER EQUIPMENT TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and recognize outstanding students for excellence and professionalism in engine and equipment diagnostics, overhaul and repair of both liquid and air-cooled engines. It will also evaluate the ability to troubleshoot and possibly overhaul the power train components of a piece of powered equipment and/or machinery.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA light blue work shirt and navy pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with small air-cooled engine repair or power equipment-related repair programs with that as its occupational objective.

Equipment and Materials:

1. Supplied by the technical committee:
 - a. All necessary engines, engine parts, work stations, test stands, power equipment, gasoline, oil and **all basic hand tools** as well as necessary specialty tools
 - b. Industry manuals, including service and repair instruction manuals
 - c. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Precision measuring tools (to measure cylinder bore, crankshaft journals, etc.)
 - b. V.O.A. meter capable of reading 10 amps, DC
 - c. Tachometer capable of reading up to 12,000 rpm (for two-cycle power units)
 - d. Ignition tester (to check spark) capable of testing the various manufacturers

Scope of the Contest

1. The contest will cover engine component identification, engine operation diagnosis, failure

analysis, and repair and testing of engines and related power equipment.

2. Contestants will visit a series of testing stations. The stations will test the contestant's knowledge of various operating systems. Component identification and repair, troubleshooting, and other aspects of power equipment including the entire power train system.
3. Contestants will take a written test as part of the contest orientation meeting before the skill portion. The test could cover manufacturer's engines, parts identification, ordering and/or related equipment. There will also be the possibility of additional written portions during the day of the skill event.
4. Contestants should have knowledge of two-cycle and four-cycle engines, 2 through 20 horsepower, and of both L-head and overhead valve design as well as both single and twin cylinder design.
5. Contestants will demonstrate their ability to perform various skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes AES Lawn Parts, Briggs & Stratton Corp., Kohler Co. and Tecumseh Products Corp..

a. Ignition

1. Disassemble ignition system
2. Inspect and test ignition components
3. Check coil/ignition module output
4. Test and repair/replace electronic ignition components
5. Reassemble ignition system
6. Test equipment related switches and harnesses

b. Fuel System

1. Inspect, service, repair and adjust carburetor
2. Inspect, clean and replace filters
3. Check fuel tank, valves and lines
4. Inspect and service/repair fuel pumps
5. Test equipment-related fuel tanks, lines and related systems

c. Governor

1. Disassemble, inspect, service and reassemble governor

d. Starter System

1. Inspect starter system
2. Disassemble, service and adjust starting system
3. Reassemble starting system
4. Testing and troubleshooting wiring schematics of power-related equipment

e. Cooling System

1. Inspect, test and troubleshoot both liquid and air-cooled cooling systems of both engines and equipment.

f. Lubricating System

1. Inspect and service lubrication system
2. Check oil level and/or fuel/oil mixture

g. Valve and Ports

1. Inspect and service valve train components
2. Check and clean ports
3. Check and adjust valves

h. Exhaust System

1. Inspect and service exhaust components

i. Engine Block Components

1. Disassemble engine
2. Inspect and determine ring end gap
3. Inspect and measure crankshaft and connecting rod bearing journals
4. Inspect and measure cylinders, piston and rings
5. Recondition or replace internal parts
6. Correct torque of critical fasteners
7. Replace gaskets and/or sealants
8. Reassemble engine
9. Test running adjustments

j. Diagnostic Tests

1. Test crankcase vacuum
 - a. Diagnose and correct vacuum/breather problems
2. Test compression and/or leakdown
 - a. Diagnose and correct compression problems

k. Failure Analysis

1. Analyze failed engine components to determine failure cause
2. Determine best method to repair failure
3. Estimate cost of repair

l. Shop Procedures

1. Use of proper techniques in the care and use of tools and equipment
2. Demonstrate ability to work accurately with precision instruments
3. Use proper safety procedures
4. Demonstrate ability to use service manuals and/or bulletins
5. Perform tasks within assigned time limits
6. Give a verbal response to a customer and/or customer-related problematic question

m. Business Operation

1. Demonstrate ability to look up part numbers
2. Prepare shop repair ticket
3. Prepare a warranty claim
4. Prepare a parts and labor invoice
5. Calculate costs accurately

n. Power Equipment Operation

1. Understand and operate equipment within equipment manufacturer's guidelines
2. Isolate engine from transmission and/or attachments
3. Prep equipment for delivery

o. Transmission/Powertrain

1. Understand the theory of transmission and components
2. Disassemble power train component
3. Assemble a power train component
4. Diagnose and correct a potential problem

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
POWER EQUIPMENT TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Station #1	30								
Station #2	30								
Station #3	10								
Station #4	15								
Station #5	10								
Station #6	10								
Station #7	10								
Station #8	15								
Station #9	10								
Station #10	15								
Station #11	15								
Station #12	10								
SUBTOTAL									
Written test									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

PRECISION MACHINING TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of precision machining technology.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with precision machining technology as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary machines, workholding devices and work-piece materials
 - b. All necessary hand tools and precision measuring instruments needed by contestants and/or judges
 - c. All necessary personal computers and software for offline part programming
 - d. All necessary reference material, charts and work instructions to be used by contestants and/or judges
2. Supplied by the contestant:
 - a. Calculator

Note: Contestants are **not** to bring any tools or reference materials to the contest.

Scope of the Contest

1. Overview of Competencies Assessed

Each contestant in the SkillsUSA Championships is expected to demonstrate competency in manual machining performance skills and precision machining technology related knowledge (theory). This includes:

- a. Applying fundamental computational skills
- b. Interpreting engineering drawings, technical data and other graphics
- c. Applying physical science principles
- d. Setup and operation of manual metalworking

machines

- e. Industrial safety and hygiene requirements
- f. Use of a PC and keyboarding skills, using offline CNC programming software, ability to program, setup and operate basic CNC machines

Competency assessments involve both hands-on skills and knowledge areas.

2. Technical Committee Role and Participation

Selections of the competencies to be tested are determined by the SkillsUSA Championships (PMT) technical committee. Committee membership includes AMT—The Association for Manufacturing Technology, Brown-Covey Inc., Clausing Industrial Inc., Crossland Machinery, Denford Inc., Honeywell Inc., International Association of Machinists & Aerospace Workers, L. S. Starrett Co., MeadWestvaco, National Institute for Metalworking Skills, National Tooling & Machining Association, Okuma America Corp., Remmele Engineering Inc., Robert W. Sherman & Associates, Sandvik Coromant Co., Stauble Machine & Tool Co., The Bailey Group, WRH Machine Repair and individual training and education consultants, David E. Horn, Robert W. Parent and James L. Wallbeoff.

3. Contest is Based on NIMS Skill Standards

The contest will be based on and consistent with the National Institute For Metalworking Skills (NIMS), Duties and Standards for Machining Skills, Levels I and II. Information on how to obtain these skill standards may be obtained directly from NIMS by calling (703) 352-4971, or on the Web at www.nims-skills.org.

4. Machining-Related Computational Competencies (Inch and Metric)

- a. Apply basic arithmetic skills to solve problems.
- b. Apply functional algebra, geometry, trigonometry to solve problems.
- c. Use formulas, handbook tables, charts and technical reports to solve problems or make decisions.
- d. Be able to chart, interpret and explain statistical process control and inspection data.
- e. Be able to calculate the correct amount of grind stock to be left on a part when doing roughing operations.
- f. Calculate center offsets for taper turning and compound slide settings for angle turning

5. Professional Development Competencies

- a. Each year, the Precision Machining technical committee will devise and conduct an interview with each contestant as part of the contest.
- b. Contestants may be asked to:
 1. Explain a technical issue related to precision machining technology such as sequence of operations, one piece vs. production set-ups; related non-machining operations such as heat treating, deburring, material handling, etc. or:

2. Analyze a specific machining related problem and then make an oral report or:
3. Respond to general questions that typically would be part of an employment type interview.
- c. The contestant will be judged on poise, confidence, knowledge of the subject, oral communication skills, the ability to react to new situations and to make sound decisions.
- d. From photographs, identify and explain the proper use or application of precision machining technology related machinery or tooling.
- e. From a list of modern precision machining technology related terms, explain the meaning of each term and discuss the current application of each term.

6. Communication Competencies

- a. Using a MSDS sheet, determine and explain the steps to be taken related to the cleanup and reporting of a chemical spill in a typical machine shop situation.
- b. Read, interpret, conceptualize and be able to report (orally, handwritten note or paper document) common manufacturing processes related to precision machining and relate them to features of a part or engineering drawing of a part.
- c. Interpret single or multiple page engineering drawings or sketches (inch or metric) to determine features to be machined.
- d. Translate geometric tolerance symbols and other part specifications contained within feature control symbols used in machining and measurement. (*ASME Y14.5-1982*)
- e. Demonstrate knowledge and understanding of projection theory and other engineering drawing principles.
- f. Be able to produce an appropriate freehand orthographic, oblique, isometric or perspective sketch of a part to be machined.
- g. Write or letter legibly.
- h. Enter, retrieve, update, change or analyze computer-stored data related to machining or inspection.
- i. Be able to orally explain machining procedures and/or practices.

7. Physical Science Competencies

- a. Demonstrate fundamental knowledge of principles of mechanics, machines, heat, light, sound and other forms of energy in relation to cutting and work holding tooling used in both manual and CNC machining.
- b. Be able to describe the physical and/or metallurgical characteristics of cast irons, steels, nonferrous metals, composites, plastics and other materials that could be machined.
- c. Understand and be able to discuss the effects of heat-treating and coating processes on materials used for work pieces and/or cutting tools.

- d. Be able to explain the process by which carbide and/or ceramic cutting tool inserts are made.
- e. Be able to read and use machinability tables to determine the effect the work piece material has on such things as cutting speed, feed rate, depth of cut, cutter selection, tool wear, surface finish, etc.

8. Safety and Hygiene Competencies

- a. Understand and practice safe operation of the machines now being used.
- b. Know and demonstrate an understanding of safety codes and rules used to safeguard self, other workers and the equipment and tooling.
- c. Apply good hygiene in the use of cutting fluids and/or other chemicals typically used for machining.
- d. Be able to read, understand and follow a Material Safety Data Sheet (MSDS).
- e. Demonstrate safe work habits when performing any of the machining, bench work, material handling or measurement competencies listed for this precision machining competition.

9. Manual Turning (Lathe) Operation Competencies

- a. Be able to set up machine for single or multiple part production, which includes setting machine stops, proper speeds, feeds and depth of cuts for the material to be machined and the type of cutting tools available.
- b. From the cutting tools available (could be HSS, cast alloys or carbide), select the best tool for the operation and mount properly.
- c. Perform basic turning operations: work between centers, three or four-jaw chuck work, collet work, center drilling, straight turning, shoulder and end facing, chamfering, radius turning, grooving, cutting off, drilling, boring, reaming, taper and angle turning, roughing (leaving grind stock) and finishing, knurling, filing and polishing and internal and external thread chasing.
- d. Demonstrate the ability to hold inch and/or metric dimensional, geometric and surface finish tolerance requirements.
- e. Be able to identify and discuss the application of other types of lathes and the advantages of each.

10. Manual Milling Machine Operation Competencies

- a. Be able to set up machine for single or multiple part production, which includes setting machine stops, calculating proper cubic feet per minute, chip load, depth of cut, speeds and feeds for the material being machined and the type of cutters available.
- b. Be able to select the proper work-holding device and set it up properly to withstand the cutting forces present.

- c. Be able to make table setups, using straps and clamps, vise setups, V-block setups and indexing devices.
- d. Be able to select the proper cutting tool holding device; mount it properly; determine correct direction of rotation; determine when a cutter is dull; be able to change inserts and chip breakers.
- e. Perform basic milling operations that include plain, face, end, side, form, angle, grooving, keyway/keyseat and cut-off.
- f. Demonstrate ability to setup and use a dividing head and/or rotary table.
- g. Demonstrate the ability to tram in the machine head, milling vise or other workholding devices.
- h. Demonstrate knowledge of cutter types, styles and materials.

11. Manual Drill Press Competencies

- a. Machine preparation including selecting proper RPM for the cutting tool being used.
- b. Selecting and safely mounting work-holding device
- c. Properly mounting work piece in work-holding device.
- d. Selecting the proper cutting tool for the job.
- e. Perform drilling, countersinking, counterboring, spot-facing, reaming and tapping operations.
- f. Demonstrate a knowledge of drill press classifications and their applications.
- g. Demonstrate knowledge of common drill press cutting tool types and applications.
- h. Demonstrate knowledge of common drill press work-holding devices and their applications.

12. Manual Grinding Machine Competencies

- a. Demonstrate knowledge of surface, cylindrical, centerless and internal grinding machines and their applications.
- b. Ability to set up and operate a manual horizontal reciprocating surface grinder.
- c. Perform surface grinding operations to produce flat, parallel, stepped and angle surfaces.
- d. Ability to use a permanent magnet chuck (table) on a surface grinder.
- e. Ability to determine proper infeed, work speed and crossfeed speed.
- f. Ability to dress the wheel.
- g. Demonstrate a knowledge of grinding wheel characteristics, construction, standards and selection including: wheel markings, wheel shapes, proper storage for wheels and how to inspect a grinding wheel.
- h. Demonstrate a knowledge of cutting fluids used in grinding operations.
- i. Demonstrate knowledge of superabrasive technology and applications.
- j. Ability to obtain and hold surface finish tolerances.
- k. Ability to obtain and hold close inch or metric dimensional tolerances.

13. Bench and Hand Tool Competencies

- a. Demonstrate ability to use layout hand tools (in

conjunction with the measuring tool competencies listed in the next section) including coating materials, surface plates, v-blocks, scribes, dividers, trammels, keyseat rules, hermaphrodite calipers, angle plates, surface gage, and prick and center punches.

- b. Be able to find the center of a square, cylindrical, rectangular work piece; layout bolt circles and hole locations; layout features to be produced.
- c. Demonstrate ability to properly use hammer, screwdrivers, files, chisels, wrenches, hand taps and tap wrenches, threading dies, hand reamers, hand hack saws and blade applications, and a bench vise.
- d. Know how to deburr work pieces after machining or hand operations.
- e. Be able to hand letter or number stamp parts.

14. Process Control and Measurement Competencies

- a. Using current industrial engineering drawings and work pieces, make precision measurements for specific features.
- b. Demonstrate ability to select and use the proper measuring device (inch or metric) for the feature to be measured.
- c. Understand and be able to explain the reason for using calibrated measuring tools.
- d. Be able to make the appropriate calculations to set up the measuring device or to mathematically determine location of part features.
- e. Demonstrate knowledge of and be able to select, assemble and disassemble gage block sets using the least block method.
- f. Demonstrate knowledge of and ability to measure surface finishes.
- g. Be able to effectively use common precision machining measuring tools (inch or metric) such as: steel rules; combination square sets, depth gages, spring calipers, outside/inside/depth micrometers, vernier/dial/digital calipers, vernier/digital height gage, protractor, mechanical/electronic indicators, go/no-go gages; comparators; surface plates, angle plates, parallel blocks, inspection centers, sine bars/plates, and profilometer/surface finish comparison devices.
- h. Be able to physically measure for: parallelism; squareness; roundness; concentricity; axial runout; flatness; hole location/size; angles; tapers; threads; linear.
- i. Know which manufacturing processes are capable of producing specific surface finishes economically.
- j. Demonstrate a knowledge of the general classes of fits.
- k. Demonstrate a knowledge of statistical process control (SPC) terminology and ability to use quality.

15. Power Sawing Competencies

- a. Demonstrate a knowledge of power and hack sawing and band sawing processes including: machine types and applications; work holding accessories; basic setup considerations, blade/band selection; special safety precautions.

16. Machinability Knowledge Competencies

- a. Be able to demonstrate an understanding of the components that boost machine performance and cut costs.
 - 1. Use of optimum speeds and feeds when machining.
 - 2. Selection of the best cutting tool for the material being machined.
 - 3. Selection of proper cutting tool geometry related to horsepower of machine and the material being machined.
 - 4. Capability of the machine to produce the tolerance required.
 - 5. Selection of the most suitable measuring tool for the tolerance specified.
 - 6. Testing for and maintaining machine geometries to manufacturer specifications.
 - 7. Awareness of new or emerging precision machining technologies.
- b. Be able to discuss the variables that could cause machining problems such as tool/work overhang, tool grade/geometry, machine condition/power, cutting fluid, shape of work, chip breakers, material hardness, etc.
- c. Be able to discuss what chip shape and color can tell you about optimum cutting.
- d. Be able to discuss the relative machinability of steels.

17. CNC Milling Programming Competencies

- a. Understand machine capabilities to determine proper speeds, feeds and depth of cuts for the cutting tools available and the material being machined.
- b. The operational sequence required for machining linear and circular interpolation profiles.
- c. The use of standard preparatory and miscellaneous function codes for straight line moves in the X, Y and Z axis.
- d. The use of G02 and G03 codes for arcs and circles.
- e. Write a CNC program to machine a simple part using offline programming software on a personal computer.
- f. Verify the CNC program using graphic verification with offline programming on a personal computer.
- g. Demonstrate knowledge of types of CNC machines including machining centers; axes designations; advantages of CNC; CAD/CAM; work-holding systems; and cutting tools used with CNC machining.

18. CNC Turning (Lathe) Programming Competencies

- a. Understand machine capabilities to determine proper speeds, feeds and depth of cuts for the cutting tools available and the material being machined.
- b. The operational sequence required for machining cylindrical parts.
- c. The use of standard preparatory and miscellaneous function codes for straightline moves in the X and Z axes.
- d. The use of G02 and G03 codes for arcs and contours; macro code for the incremental feed command on a fixed cycle.
- e. Write a CNC program to machine a simple part using offline programming software on a personal computer.
- f. Verify the CNC program using graphic verification with offline programming software on a personal computer.

19. CNC Machine Setup and Operation Competencies

NONE. Actual machine setup and operation is not a requirement in the Precision Machining Technology competition. This section is covered in a separate NIMS Level II CNC contest area and is not part of precision machining technology.

20. Flexible Manufacturing Systems and New Technologies Knowledge Competencies

- a. Demonstrate knowledge of trends and new manufacturing technologies that relate to precision machining such as CAD/CADD, CAE, CIM/CAM, CIM/GEN, PLC's, computer communication networks and information exchange, Internet's influence, high speed machining, LBM Lasers Beam Machining), water jets, EDM (Electrical Discharge Machining), robots in production, rapid prototyping, net-shape/near-shape technologies, Just-In-Time, automated inspection/measurement, etc.

Special Note

Wherever the words "Demonstrate a knowledge of" are used, the technical committee could include any of that subject matter in the written theory test that is administered on the Wednesday morning prior to the hands-on skill competition.

It should also be understood that some of these "knowledge of" subjects are also a normal part of the hands-on portion, such as reading engineering drawings, making calculations, etc.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
PRECISION MACHINING TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
1. Manual Engine Lathe (Turning)	100								
2. Manual Milling Machine Operation	100								
3. CNC Programming-Turning	100								
4. Manual Drill Press and Surface Grinder Operation	100								
5. Process Control and Precision Measurement	100								
6. CNC Programming-Milling	100								
7. Related Knowledge Written Test	100								
8. Engineering Drawing Interpretation	75								
9. Geometric Tolerancing	25								
10. Professional Development	50								
SUBTOTAL	850								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
Tie Breakers: SkillsUSA Written Test Manual Milling Score Manual Engine Lathe									
TOTAL									

PRESCHOOL TEACHING ASSISTANT



Purpose

To evaluate a contestant's ability to plan and present appropriate activities for preschool age children relating to a specific theme and demonstrate a general knowledge of quality child care.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Black dress slacks, white dress shirt, plain black tie with no pattern or SkillsUSA black tie from Midwest Trophy, black socks and black shoes.

For women: Black dress slacks or skirt, with businesslike white, collarless blouse or white blouse with small, plain collar that may not extend onto the lapels of the blazer, black sheer or skin-tone hose and black shoes. To purchase official clothing, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in technical education programs with child care as the occupational objective.

Observer Rule

Observers who are not participants will be allowed to be present. No talking or gesturing will be permitted. No observers will be allowed in the floor assembly area. No member of the audience will be permitted to enter or leave the room while a contestant is speaking. No cameras, video recorders or tape recorders will be allowed by members of the audience. However, after the presentations are finished, a video will be available of the presentations for all to observe.

Equipment and Materials

1. Supplied by the technical committee:

- a. A large assortment of real-life materials to assist them in the execution of their lesson plan. (For example, sea shells, seeds, nuts and bolts, bells, hornet's nests, etc.)
- b. A photocopy of *Developmentally Appropriate Practice in Early Childhood Programs* by Bredekamp and Copple, 1997, NAEYC, Part 4 "Developmentally Appropriate Practice for 3-5 Year-Olds, Consideration for early childhood educators in supporting," Pages 103, 104, 109, 115-116 and the boxes on Pages 102, 105, 108, text on 110-114 and box on Page 117. Numbers will be put in front of

each expectation so that they may refer to the number in their lesson plan without having to write the text.

2. Supplied by the contestant:

- a. All tools of the profession such as felt tip markers, crayons, scissors, rulers, pens pencils, scotch tape, masking tape, rubber bands, paper fasteners (e.g., stapler, paper clips, brads), various types of paper, and white glue.

Scope of the Contest

1. Small Group Presentation

- a. Given assorted materials as would be readily available in a child care facility, the contestant will develop a hands-on lesson plan and organize their choice of supplied materials to assist them in addressing a basic concept from one of the following curriculum areas for a small group of four-year-old preschool children. Curriculum areas: Food and Nutrition, Language Arts, Math, Music, Science and Social Studies.
- b. The large assortment of real-life materials will be unknown to the contestant prior to the contest. Before choosing materials, the contestant will be assigned a curriculum area. The contestant may then choose the materials they need. A completed handwritten lesson plan will be submitted to the judges after the materials are prepared for the presentation.
- c. The contestant will have up to three hours to write, plan and prepare their presentation. They will be given a 30-minute warning. When they are finished, they may leave the preparation area, but they will no longer have access to their lesson plans or materials.
- d. The contestant will develop a neatly handwritten plan for 4-year-old children that is closely tied to "Developmentally Appropriate Practice in Early Childhood Programs by Bredekamp and Copple" (a handout that will be given to them at the beginning of this segment of the competition). They will write the lesson on a supplied Lesson Plan Outline sheet that includes the following components:
 1. Curriculum Area
 2. Curriculum Goals (skills and/or concepts)
 3. Description of Activity
 4. Materials or Supplies Needed
- e. The lesson plan outline and assorted materials will be distributed to the contestant at the beginning of the competition, prior to timing.
- f. The contestant will be given three to four minutes to give their presentation to two to three adults (representing preschool children) sitting on chairs at a table. The judges

will be unknown to the contestant. Penalty: Five points will be deducted for each 30 seconds or fraction thereof over four minutes. A one minute warning will be given.

- g. Judges will have one to two minutes to ask questions related to inclusion and diversity in preschool teaching.
- h. All materials will be returned at the end of the competition.

2. Transition and Book Reading Presentation

- a. The contestant will be given 45 minutes to choose one book out of 10 offered and then will:
 - 1. Present in six to seven minutes a transitional activity and a book reading to a large group of young adults sitting on chairs. The book need not be finished.
 - 2. Same time penalties apply with a one-minute warning.
 - 3. No visual aids will be used except the book.

3. Test

- a. The contestant will take a multiple choice test on Child Development and General Preschool Teaching Knowledge.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
PRESCHOOL TEACHING ASSISTANT RATING SHEET**

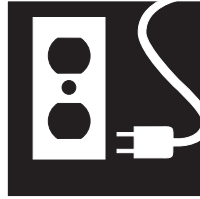
ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER					
1. PRESENTATION (175 points)							
A. Lesson Plan							
1. Printing, spelling, neatness	5						
2. Age appropriate teaching methods as outlined in "Considerations for early childhood educators...NAEYC"	10						
3. Age appropriate goals and/or concepts as referred to in NAEYC	10						
4. Does the procedure and use of materials support goals?	10						
5. Four areas of Lesson Plan completed correctly	10						
B. Personal Qualities							
1. Grammar	5						
2. Voice	5						
3. Poise	5						
4. Attitude	5						
5. Knowledge of preschool teaching philosophy regarding inclusion and diversity – judges' questions	5						
6. Child's eye level	5						
C. Presentation Techniques							
1. Attention Getting	5						
2. Closing/Summation	5						
3. Presentation supported goals	10						
4. Opportunities presented for children to interact with materials	20						
5. Opportunity for children to construct their own learning as opposed to teacher-directed instruction	20						
D. Originality/Creativity	10						
E. Lesson Materials							
1. Geared to the age, ability and developmental needs of preschool children	15						
2. Designed to provide a variety of learning experiences	15						
F. Time Penalty							
SUBTOTAL, PART 1							

continued

**SKILLSUSA CHAMPIONSHIPS
PRESCHOOL TEACHING ASSISTANT RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER					
2. TRANSITION AND BOOK READING (80 points)							
A. Personal Qualities							
1. Grammar	5						
2. Voice	5						
3. Poise	5						
4. Attitude	5						
B. Techniques							
1. Attention getting	20						
2. Voice as a teaching tool (timing, diction, inflection and projection)	20						
3. Opportunities for children to interact	20						
C. Time Limit Penalty							
SUBTOTAL, PART 2							
3. WRITTEN EXAM (30 points)							
4. CLOTHING PENALTY (minus 0 to 5 percent of total points)							
TOTAL							

RESIDENTIAL WIRING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of residential wiring.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with residential wiring or electrical trades as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All wiring panels, electrical supplies and materials as required by the problem assigned
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Arc-joint pliers
 - b. Assorted flat blade and Phillips screwdrivers
 - c. *Coaxial cable stripper
 - d. *Communications cable cutter
 - e. *Conduit bender, $\frac{1}{2}$ " EMT
 - f. Conduit reamer
 - g. *Cordless electric hand drill with extra battery (NOTICE: The use of AC power-operated tools will not be permitted.)
 - h. *Crimp tool for RG-6 coaxial cable connectors
 - i. $\frac{3}{4}$ " spade or ship auger bit *
 - j. Diagonal pliers
 - k. Electrician's hammer
 - l. Electrician's knife

(NOTICE: The use of razor knives [box cutters] will not be permitted for wire stripping.)

 - m. *Electrician's scissors
 - n. *Hacksaw
 - o. Hex key wrenches - sizes $\frac{1}{16}$ " through $\frac{3}{8}$ "

- p. Keyhole (compass) saw with wood and wall-board blade
- q. Measuring tape or folding ruler
- r. Multimeter (volt, ohm, amp) or equivalent voltage and continuity testers
- s. **National Electrical Code* book (most current)
- t. Needle nose pliers
- u. Non-programmable scientific calculator
- v. Pencil
- w. Side cutting pliers
- x. Tool pouch or medium size tool box or bag
- y. Torpedo level
- z. *Twisted-pair cable stripper
- aa. Wire strippers
- bb. *110-type punch-down tool

*May be supplied by the technical committee. Check the SkillsUSA Championships April 15 Update annually.

Scope of Contest

1. Contestants will be given job, information and instruction sheets for wiring a residence or light commercial installation.
2. All work must conform to the specifications of the latest edition of the *National Electrical Code* and the *TIA/EIA-570 Residential and Light Commercial Telecommunication Wiring Standard* as of January prior to the SkillsUSA Championships.
3. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: D.F. Patton & Associates, Kansas City Electrical JATC, National Joint Apprenticeship Training Committee and Wayne J. Griffin Electric Inc.

a. Safety Rules and Practices

1. Application of shop rules and regulations
2. Techniques and practices of fire prevention
3. Correct use of electrical and hand tools
4. Techniques of lifting and climbing ladders
5. Selection of work clothing
6. Installation of temporary electrical service
7. Maintaining a safe work area

b. Use of Tools and Equipment

1. Use of and dexterity with hand tools
2. Use and connection of electrical test equipment

c. Basic Theory

1. Use and application of wiring diagrams, schematics/drawings and prints
2. Application of math calculations for circuits and measurements
3. Application of theory concepts for troubleshooting

d. Trade Information

1. Use and application of the *National Electrical Code*
2. Techniques of sketching and diagramming
3. Correlating specifications, prints and job sites
4. Planning work and layout of electrical installations
5. Use of trade catalogs and publications

e. Basic Equipment and Procedures

1. Techniques of residential and light commercial wiring
2. Techniques of wire pulling — such as conduit raceways or gutters
3. Use and application of electrical devices and materials

f. Electrical Circuits

1. Computing service loads
2. Calculate individual circuit loads
3. Determine the number of outlets permitted in circuits
4. Compute the size of service entrance conductors
5. Use of all types of cables — NM, MC, and service

g. Install Service Entrance

1. Install main service panel
2. Install circuit breakers in panel
3. Install service entrance cable to service drop
4. Install temporary electrical service

h. Install Switch Boxes and Outlet Boxes

1. Install bar hangers
2. Install recess boxes for outlets
3. Install gangable boxes
4. Install octagon boxes
5. Install surface mount boxes
6. Install recessed fixture housing in ceiling
7. Install outlet boxes in a dry wall, lath, plaster or paneled walls

i. Maintain Existing Wiring

1. Diagnose and repair/replace incandescent lights
2. Replace existing receptacles and switches
3. Troubleshoot a branch circuit
4. Test for correct voltages

j. Rough In, Connect and Install these Electrical Devices

1. Single pole switch
2. Three-way switch
3. Four-way switch
4. Duplex grounded receptacle
5. 120-240 volt distribution panel
6. Door chime system
7. Ground fault interrupting devices
8. Emergency warning system
9. Photoelectric cell control

10. Surface raceway
11. Exterior lighting fixtures
12. Lighting dimmers
13. TV outlets
14. Telephone outlets
15. Emergency lighting systems
16. Appliance circuits

k. Install PVC and EMT conduit

1. Make the following bends:
 - a. 90 degree
 - b. offsets
 - c. back to back
 - d. saddle
2. Bends will be made from measurements
3. Determine correct conduit measurements

l. Install residential telecommunications infrastructure.

1. Install the following telecommunications cabling and components:
 - a. Coaxial cable with “F” type connectors and terminating hardware.
 - b. Twisted-pair cabling, connectors, and terminating hardware
 - c. 110-type terminating hardware
2. All installations will be installed and tested to current *TIA/EIA 570* standards.

Additional resources are available online. “Contest Singles” include prior year’s contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
RESIDENTIAL WIRING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Box Locations	20									
Conduit 4-Point Saddle Bend	20									
Conduit 90 Degree Bend and Offsets	10									
Device Locations	20									
Functional/Operational Test	60									
Grounding, Splices, and Terminations	80									
Height Requirements	20									
National Electrical Code Compliance	30									
Oral Professional Assessment	20									
Panel Wiring	20									
Project Overall Neatness	20									
Safety	20									
Wiring Methods	30									
Written Test	100									
SUBTOTAL	470									
CLOTHING PENALTY (minus 0 to 5 percent of total points)										
TOTAL										

ROBOTICS AND AUTOMATION TECHNOLOGY



Purpose

To evaluate each contestant's preparation for employment in the emerging arena of robotics and automation with emphasis on the team approach to problem-solving in a work environment. To recognize outstanding performance in the use of new work styles and technology by contestants.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with robotics, automation and/or manufacturing as the occupational objective.

Equipment and Materials

1. Supplied by technical committee:
 - a. Necessary equipment:
 1. Computer (**See Note 1 below**)
 2. Printer
 3. Scrobot ER-4u robot
 4. Scrobase software and manuals
 5. Teach Pendant
 6. Linear Slide Base
 7. Conveyor
 8. Pneumatic parts feeder
 9. Pneumatic press with position sensors
 10. Proximity sensor(s)
 11. Photo sensor
 12. Micro-switches
 13. Wax and Metal blocks
 14. Notebooks
 15. Task assignment
 16. Power strips
 17. Blank Diskettes
 18. Mounting platforms
 19. Extension cords
 20. And any other items deemed necessary by the Technical Committee
 - b. Technical information as required by contest

2. Supplied by contestants:
 - a. Necessary equipment:
 1. Computer (**Call to confirm - See note 1 below**)
 2. Wire cutters/diagonals 3" to 6"
 3. Screwdrivers (3" to 6" blade length)
 - a. Common Set to include 1/8", 1/4" and 3/8" minimum
 - b. Phillips Set to include No. 0, No. 1 and No. 2 minimum
 4. Long nose/needle nose pliers 3" to 6"
 5. Wire strippers
 6. Safety glasses (2 pair)
 7. Hookup wire, 20–24 AWG, red, black yellow, blue and green (other colors may be substituted), 150' each color
 8. Allen wrenches, Set to include 5mm, 3mm and 7/64" minimum
 9. Multimeter with leads
 10. Pencils: 2 (sharpened)
 11. 6" or 12" ruler
 12. Watch with second hand or digital counter or stop watch
 13. Power screwdriver (with cross point and common bits) to mount components to platform

Note 1: In past years, computers have been donated. The technical committee will continue to try to supply the computers, but in the event this is not possible, the contestants will be asked to supply the computers with the below listed specifications as a minimum. Contestants are asked to check the SkillsUSA Championships April 15 update annually (www.skillsusa.org/april.html) to confirm that computers will/will not be provided.

Computer specifications:

Each team is to provide one computer with the following:

- Pentium III with 450 MHZ processor, or higher, equipped with CD Drive.
- 128 MB RAM or higher
- Hard Drive with at least 60 MB of free disk space
- Windows 98/2000/ME or XP
- Super VGA or better graphics display, minimum 256 colors
- Mouse or pointing device
- USB port

Scope of the Contest

1. Teams must be composed of two students who will demonstrate their ability to compile and perform the skills and knowledge as determined by the Robotics and Automation Technology technical committee. Committee membership includes

DEPCO Inc., Honeywell Inc. FM&T, intelitek Inc., Learning Labs Inc. and SIMC Training Systems.

2. The teams will be provided with a detailed description of the tasks and objectives required for an automated robotic workcell.

a. Setting Up an Automated Robotic Workcell

1. Assemble robotic workcell
2. Establish communication between computer and robot
3. Establish communication with peripheral equipment

b. Working with Hand Tools and Integrating Peripherals

1. Wiring communication between robot and computer
2. Wiring communication between peripherals and interface controller
3. Verify electronic connections using a multimeter

c. Creating Robot Positions and Verify Safe Arm Travel

1. Determine minimum number of positions required to perform assigned tasks
2. Layout robot within the workcell for maximum efficiency
3. Teach and record each required position
4. Verify arm path between positions

d. Programming of Robot

1. Determine sequencing and logic
2. Determine input/output communication logic
3. Develop Logic diagram
4. Write robot program

Team Organization Goal

This is a team competition, and members may interact at will. The competition will be conducted as performed in industry. The robot operators will locate and position the robot to specific locations, and the programmers will tell the robot exactly what is expected and when to perform specific functions. The contest is designed to promote creativity in the organization of production responsibility.

All team members are responsible for double-checking each other's work and quality control.

General Information

There will be a six-hour practice session with one hour for lunch one day prior to contest. During this practice session, students and teachers will have the opportunity to verify computer compatibility with equipment provided.

Note: The judging criteria and the points assigned will be determined by the technical committee each year.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
ROBOTICS AND AUTOMATION TECHNOLOGY RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Written test									
Oral Professional Assessment									
SUBTOTAL									
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

SHEET METAL



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of sheet metal.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with sheet metal as the occupational objective.

Equipment and Materials

1. Supplied by the technical committee:
 - a. All necessary equipment, tools, materials and work benches
 - b. All necessary information and furnishings for judges and technical committee
2. Supplied by the contestant:
 - a. Tool box
 - b. One each: Aviation M1, Aviation M2, Aviation M3 and combination or pattern tinner's snips
 - c. 8" sheet metal worker's vice grips
 - d. 8" or 10" regular vice grips
 - e. 12" combination square with glass level
 - f. 24" flat steel square
 - g. 8" combination pliers
 - h. One each 6" and 12" straight-leg sprint dividers
 - i. Flexible steel tape measure
 - j. Scratch awl
 - k. Screwdriver set (minimum one slotted and one Phillips)
 - l. One each ball peen, setting and riveting hammers
 - m. Wood, leather or rubber mallet
 - n. Two hand groovers, one for $\frac{1}{4}$ " grooved lock, one for $\frac{5}{16}$ " grooved lock
 - o. 36" straightedge
 - p. Pop rivet gun
 - q. Two wooden pencils

- r. Drive cleat turner
- s. Hand-held calculator for written test (optional)
- t. Additional tools as desired, subject to approval of the technical committee
- u. Center punch
- v. One pound rivet set
- w. Marking pen
- x. Small trammel points
- y. Scratch gauges

Scope of the Contest

1. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes: D'Agostino Mechanical Contractors, Harton Co. Inc., Mechanical Contractors Association, PHCC—National Association, Sheet Metal & Air Conditioning Contractors Association and Sheet Metal Workers' Local No. 2.
 - a. **Layout and Development of Various Sheet Metal Problems Using the Principles of Parallel Line Development, Radial Line Development and Triangulation Development**
 1. Rectangular sheet metal layout
 2. Round sheet metal layout
 3. Transition sheet metal layout
 - b. **Fabricate and Install Mechanical Systems**
 1. Rectangular straight duct (one piece construction)
 2. Rectangular radius throat and radius heel duct elbow
 3. Rectangular square throat and heel duct elbow
 4. Rectangular duct ogee offset
 5. Rectangular duct transition
 6. Rectangular duct Y branch
 7. Rectangular shoe tap
 8. Round straight duct
 9. Round duct elbow
 10. Round duct Y branch
 11. Round duct offset
 12. Round duct taper (transition)
 13. Round duct lateral (round tap)
 14. Round saddle tap
 15. Single wall equipment casing/housing
 16. Double wall equipment casing/housing
 17. Flats
 18. Bars
 19. Drive cleat
 20. Pocket/government lock
 21. Companion angle
 22. Flanged duct section
 23. Drop-cheek elbow
 24. Rectangular to round elbow
 25. Rectangular twisted transition

c. Fabricate and Install

Architectural/Roofing Sheet Metal

1. Batten seam metal roof panel, batten and cap
2. Standing seam metal roof panel
3. Metal flat-lock roof panel
4. Ogee gutter
5. Half-round gutter
6. Rectangular downspout/conductor
7. Offset in rectangular downspout/conductor
8. Conductor head
9. Flashing
10. Coping
11. Gravel stop fascia
12. Metal siding panel
13. Louvers
14. Column covers
15. Metal ceiling panel

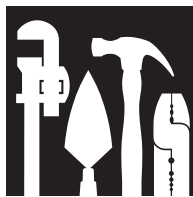
d. Fabricate and Install Specialty Sheet Metal

1. Rectangular single blade damper in frame
2. Rectangular multiblade damper in frame
3. Hopper
4. Cyclone dust collector
5. Helical (spiral) chute
6. Rectangular tube
7. Round tube
8. Hollow metal letter
9. Metal sign
10. Round duct support saddle (floor mounted)
2. Contestants will be given a job sheet explaining the job to be completed and indicating time limits.
3. Contestants will work on 26-gauge to 18-gauge galvanized or mild steel sheets.
4. All layouts will be checked by judges prior to cutting.
5. Contestants are not allowed to bring any layout books.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
SHEET METAL RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Completion of Project	20									
Dimensions	50									
Alignment	55									
Seams	20									
Laps	10									
Workmanship	25									
General Appearance	20									
Math/Layout	40									
Written test	40									
Oral Professional Assessment										
SUBTOTAL										
CLOTHING PENALTY (minus 0 - 5 percent of total points)										
TOTAL										



Purpose

To evaluate team preparation for employment and to recognize outstanding students for excellence and professionalism in the field of residential carpentry, masonry, plumbing, electricity and teamwork skills.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. Safety prescription glasses can be used only if they are equipped with approved side shields. If not, they must be covered with goggles. To purchase official work clothes, contact Midwest Trophy Manufacturing Co Inc. by calling 1-800-324-5996 or place your order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to a team of four SkillsUSA members enrolled in program(s) with building trades as the occupational objective. All team members must be from the same SkillsUSA chapter (school).

Safety Requirement

Both the instructor and the contestants certify by agreeing to enter this contest that the contestants have received instructions and have satisfactorily passed an examination on the safe use of portable electric power tools (including cordless) and all hand tools. Two contestants from each team will be required to have an OSHA Certification prior to competition. For every additional member with the OSHA Certification, points will be awarded to the team. To take the OSHA Certification test, go online to www.skillsusa.org/careersafe.html. The contestants are responsible for inspecting the tools supplied and making sure they are in safe working condition. Further, they agree that SkillsUSA Inc., the SkillsUSA Championships technical committees, volunteers and the national judges are released from all responsibility relating to personal injuries resulting from their use. Contestants will be removed from competition if proper training has not been provided and/or they are using the equipment in an unsafe manner.

Equipment and Materials

The technical committee will supply all equipment, materials and most tools. Contestants who wish to use their own tool belt may do so after Technical Committee approval. If

contestants do not bring their own tool belt, one will be provided by the technical committee. Any tools that contestants will be required to bring will be published in the SkillsUSA Championships April 15 Update annually.

Scope of the Contest

Each team will be given the project drawing at the contest orientation meeting and given two hours to meet as a team, analyze the drawing and formulate a written action plan. Each team will conduct a 3 to 5-minute professional presentation to the judges on how the team plans to accomplish the project. Every team member will be required to have an active part in the presentation. The written action plan and the presentation will be judged.

Contestants will demonstrate their ability to perform jobs and skills selected from the following list of competencies considered essential by the SkillsUSA Championships Technical Committee. Committee members include: Robert Bosch Tools Corp., The Stanley Works, Train2Build, Construction Management Advisory Group, State Farm Insurance and International Brotherhood of Electrical Workers

1. Team Action Plan and Presentation

- a. Analyze the project drawing
 1. Interpret and determine dimensions from multiview drawings
 2. Interpret specifications, abbreviations, symbols and drawing notes
 3. Interpret oral and written changes
 4. Prepare material "Take-Off" from blueprint
- b. Write the action plan and give a presentation
 1. Be able to organize, prepare and present an action plan
 2. Use of data display instruments such as flow chart or cause and effect diagrams is recommended (reference Total Quality Curriculum)
 3. As a team, develop a presentation that is 3 to 5 minutes long portraying how your team will accomplish the building project including the team's safety plan
 4. Use of visuals is permitted. Each team will be provided with a flip chart, stand and markers for this component

2. Teamwork

- a. Demonstrate the ability to work as a team
- b. Demonstrate group problem solving techniques
- c. Demonstrate team proficiency in construction of a building project

- d. Other teamwork competencies as determined by the technical committee

3. Trade Skills

Carpentry

- a. Materials, Estimating and Tools
 - 1. Identify, receive and inspect materials
 - 2. Store lumber and other materials properly
 - 3. Use the correct amount of materials for the project in the correct manner
 - 4. Correctly identify and use carpentry hand and power tools in a safe manner
- b. Rough Framing
 - 1. Frame and install sill plate, girders, floor joists and bridging
 - 2. Use of dimensional and engineered wood products and steel products
 - 3. Frame floor opening and install sub-floor
 - 4. Frame and brace walls to include corners, openings, trimmers, cripples, partitions, plumbing partitions, fixture backing and sheathing
 - 5. Frame stair stringer and other components
 - 6. Calculate and use the rise and run of a common roof
 - 7. Layout a common roof plan
 - 8. Lay out, cut and install common rafters, ridge board, ceiling joists and collar ties
 - 9. Install roof sheathing

Masonry

- a. Materials, Estimating and Tools
 - 1. Arrange masonry materials for efficient use
 - 2. Place mortar pans properly
 - 3. Keep areas neat and organized
 - 4. Estimate amount of brick, block, mortar mix and sand to be used
 - 5. Correctly identify and use masonry hand and power tools in a safe manner
- b. Tooling and Polishing Joints
 - 1. Tool concave, rake weather, V-jointer, grapevine and struck joints
 - 2. Polish the joints
 - 3. Tuckpoint a wall
 - 4. Brush and touch up a wall
- c. Lay a Brick/Block Wall
 - 1. Lay out a wall in preparation for building a straight and/or corner wall
 - 2. Spread and furrow mortar correctly for brick units
 - 3. Construct a straight wall
 - 4. Construct an outside and inside corner lead
 - 5. Spread bedjoints and throw on full headjoints for block units
 - 6. Build a block corner to a specified height

- 7. Properly install lintels and moisture drainage such as masonry flashing and weepoles
- 8. Be prepared to install brick detailing

Plumbing

- a. Materials, Estimating and Tools
 - 1. Determine type and amount of materials needed
 - 2. Store materials correctly around work area
 - 3. Identify fittings from a sketch of a piping system
 - 4. Correctly identify and use plumbing hand and power tools in a safe manner
- b. Rough In
 - 1. Calculate the slope required for waste and vent lines
 - 2. Rough in waste and vent lines for sinks, lavatories, bathtubs, showers and water closets
 - 3. Install cleanout drains
 - 4. Secure horizontal and vertical lines of pipe to wood, metal and masonry surfaces
 - 5. Rough in water supply lines for sinks, lavatories, bathtubs, showers and water closets
 - 6. Perform pressure tests on water supply system
- c. Joining Pipes
 - 1. Cut, ream and join copper tubing using the sweat method
 - 2. Cut, ream and join copper tubing using the compression method
 - 3. Cut, ream and join CPVC and other similar pipe
 - 4. Cut, ream and join PVC pipe
 - 5. Cut, ream and join ABS pipe
 - 6. Cut, ream and join copper tubing by sweat, compression or other methods

Electricity

- a. Materials, Estimating and Tools
 - 1. Use and apply the current National Electrical Code
 - 2. Plan work and lay out electrical installations
 - 3. Select proper amount and size of materials
 - 4. Correlating specifications, prints and job sites
 - 5. Correctly identify and use electrical hand and power tools in a safe manner
- b. Rough In
 - 1. Choose size and install ganged, octagon and surface mount boxes to a specified height
 - 2. Install and staple all electrical wire essentially free from hazard according to a blueprint

3. Make all necessary splices and junctions in boxes
- c. Device Installation
 1. Install the following devices:
 - Single pole switch
 - Three-way switch
 - Four-way switch
 - Duplex grounded receptacle
 - Ground fault circuit interrupter
 - Light fixtures
 2. Install wall plates

Other Competencies That May Be Considered

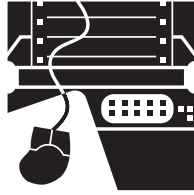
- a. Conduit in the electrical unit
- b. Troubleshooting the electrical circuits
- c. Installing plumbing fixtures
- d. Installing electric fixtures
- e. Repair or replace a P trap
- f. Brick/block composite wall
- g. Exterior or interior carpentry finish work
- h. Install shingles
- i. Install window(s)
- j. Install door(s)
- k. Install underlayment
- l. Install floor coverings

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
TEAMWORKS RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	TEAM NUMBER						
PLUMBING								
Rough								
Finish								
Plumbing Total								
ELECTRICAL								
Rough								
Finish								
Electrical Total								
CARPENTRY								
Rough								
Finish								
Carpentry Total								
MASONRY								
Rough								
Finish								
Masonry Total								
ORDER EFFICIENCY								
Amounts								
Sequence								
Timeliness								
Order Efficiency Total								
TEAM PRESENTATIONS								
Mission, Goals and Objectives								
Team Organization								
Safety Practice								
Training and Preparation								
Verbal Communication								
Convincing Presentation								
Team Presentation Total								
CLEAN SITE, DONE RIGHT, ON TIME								
Clean Site Total (from 3 items below)								
Material Storage								
Tool Storage								
Construction Debris								
Done Right								
On Time								
Clean Site, Done Right, On Time Total								
EXTENT OF COMPLETION								
CLOTHING PENALTY (minus 0 to 5 percent of total points)								
TOTAL								

TECHNICAL COMPUTER APPLICATIONS



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of technical computer applications.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with computer literacy as part or all of the occupational objective.

Equipment

1. Supplied by technical committee:
 - a. Any PC software needed to complete the contest
 - b. Network storage and networking equipment to connect to an Ethernet network
2. Supplied by the contestant:
 - a. Computer and monitor with the following minimum specifications
 1. 1.6Ghz processor with 512MB of RAM
 2. 15-inch VGA monitor
 3. Wheel mouse
 4. NIC card for a wired Ethernet connection
 5. CD-ROM
 6. Power outlet with 6 outlets
 7. Clean install of Windows XP Professional with the latest service packs installed
 8. All user passwords or BIOS passwords should be disabled or uninstalled
 - b. Software pre-installed on system
 1. Office XP Professional, full install with no add-on software installed. Current service packs should be installed
 2. Internet Explorer 6.0 or higher with service packs installed
 3. Any additional software indicated in the April 15 update, found at www.skillsusa.org/april.html.
 - c. Any changes to the hardware or software requirements will be announced annually in the April 15 SkillsUSA Championships contest update at www.skillsusa.org/april.html.

Scope of the Contest

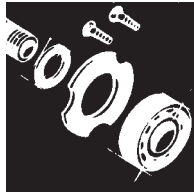
1. Contestants will demonstrate their ability to perform jobs and skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee.
 - a. A written exam covering the installation and operation of the software/hardware plus general computer support knowledge will be administered; this includes the Internet (e.g., e-mail, FTP, networking, server installation, wireless and Bluetooth technology, etc.)
 - b. Operating system installation and configuration, creation of users and policies for users and manipulation application software
 - c. Hands-on demonstration of Microsoft Office Professional (all features of Outlook, Word, Excel, Access, PowerPoint, Money, Front Page, Publisher and Internet Explorer may be used)
 - d. Hands-on demonstration of the Internet (e.g., e-mail, FTP, networking, XML usage and sharing of data across the Internet)
 - e. Contestants will demonstrate their ability to install, configure, test and use any Windows compatible software and/or add-on hardware
 - f. Contestants will demonstrate their ability to follow the directions of the SkillsUSA Championships technical committee
2. Contestants will be required to assist in unpacking, setup and repacking of network and computer equipment
3. Contestants will demonstrate appropriate handling of hardware and software while unpacking and packing
4. Contestants will demonstrate appropriate work habits, oral presentation, employment and writing skills
5. Contestants will work independently. At *no* time will cell phones or PDAs be allowed to be used during the contest
6. All contestants will start at the same time; no late entries will be permitted; no contestant may continue working after the allotted time has elapsed
7. Scoring will be completed by a review of the contestant's work products and other material. No disks or material of any kind may be brought into or removed from the contest area.
8. All systems will be checked to insure that no contest information will leave the contest. At the completion of the contest, all contestant computer hard drives will be wiped and reformatted.
9. Audio and video, including on-site interviews, may be transmitted or stored on the Internet for promotional purposes during and after all phases of the competition.
10. Competitors must wear their official SkillsUSA contestant attire to the contestant meeting on Tuesday at the time specified. Photos will be taken and become part of a PowerPoint presentation to be displayed to the public during the competition on Thursday.

**SKILLSUSA CHAMPIONSHIPS
TECHNICAL COMPUTER APPLICATIONS RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER						
a. Written test	20							
b. Oral Presentation	10							
c. Demonstrate MS Office capabilities	25							
d. Demonstrate Internet/Data Sharing via Internet	15							
e. Windows Operating System installation and configuration	15							
f. Windows-related skills, Networking skills	10							
Oral Professional Assessment								
SUBTOTAL								
CLOTHING PENALTY (minus 0 to 5 percent of total possible points)								
TOTAL								

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

TECHNICAL DRAFTING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of technical drafting.

First, refer to General Regulations, Page 9.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with technical drafting as the occupational objective.

Equipment

1. Supplied by the technical committee:
 - a. The technical drafting workstation will be equipped with a flat table (approximately 24"x72"), a second table with space for a personal computer and a chair
 - b. 110-volt electric outlet
 - c. One formatted IBM compatible diskette
 - d. Output hardware — plotter or printer
 1. Plotter media
 2. Pens, Ink or toner as required
 - e. Drafting paper/vellum
 - f. All necessary information and furnishings for judges and technical committees
2. Supplied by the contestant:
 - a. Typical personal drafting equipment and supplies desired for traditional drafting.
 - b. A personal computer, monitor and input devices or a laptop computer. Computers may be obtained from any source. To have access to the most current technology, contestants are encouraged to develop a relationship with a hometown computer/software dealer who can serve as a contestant sponsor. (**Note:** The setup and configuration, and the tear-down of all computer hardware used in the contest will be the responsibility of the contestant.)

- c. Technical software of choice. Photocopies of software licensing for every software program used in the contest must be submitted to the technical committee at the pre-contest meeting.
- d. Students may bring published computer-aided drafting reference books, software manuals, published technical drafting reference books, tables and calculators. Reference materials may not take up more than 1 cubic foot of space and may not be shared by contestants.

Scope of the Contest

1. The contest will focus on the solution of the given problems by applying appropriate technical drafting skills to solve visualization and presentation problems of a mechanical nature. The contestants will be required to solve industry-developed problems. It is at the contestant's discretion as to which drafting tools and techniques will be utilized: the technology of computer-aided drafting (CAD), traditional board techniques, or some combination of the two.
2. Contestants will demonstrate their ability to perform technical drafting skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes Big WIND, GCS Corp. and SolidWorks Corp..
 - a. Scale usage
 - b. Sketching
 - c. Orthographic views
 - d. Auxiliary views
 - e. Sectional views
 - f. Dimensioning and tolerancing including geometric dimensioning and tolerances
 - g. Detail and assembly drawings
 - h. Fasteners and hardware
 - i. Presentation/pictorial drawings
 - j. Materials and specifications
 - k. Manufacturing processes
 - l. Power transmission
 - m. Sheet metal developments
 - n. Use of reference materials
 - o. Computer-generated 3-D models
 - p. Calculation of mass properties (volume, density, etc.)
3. During the contest, the contestants will work independently. No assistance will be given by other contestants, instructors or observers. Limited technical assistance for computer or software malfunction may be given by appropriate manufacturer's representatives.

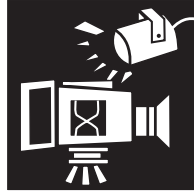
4. Contestants will each be given the same amount of time to accomplish the problem. Everyone will begin at the same time and take the required lunch break, and no one will be allowed to work past the contest conclusion. Note: An exception may be granted at the discretion of the technical committee in an instance where a computer/software malfunction causes a significant time loss that impacts the contestant's performance.
5. Each contestant will be responsible for establishing plotting procedures at the computer for plotting their work to a plot file on a floppy disk.
6. Judging criteria are general in nature and will be done from some combination of written test, plotted drawings, manual drawings and/or sketches. Specific criteria will be based on the demonstration of competency in those elements of accuracy and productivity included in the contest problem(s).

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
TECHNICAL DRAFTING RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER								
Oral Professional Assessment										
Written Test	20									
Problem Solution (specific criteria to be supplied at contest orientation)	140									
Dimensioning and Notes	20									
Layout and Presentation of Drawing(s)	20									
SUBTOTAL										
CLOTHING PENALTY (minus 0 to 5 percent of total points)										
TOTAL										

TELEVISION (VIDEO) PRODUCTION



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of television/video production.

First, refer to General Regulations, Page 9.

Clothing Requirements

For men: Official SkillsUSA white polo shirt with black dress slacks, black leather shoes and black socks, or official SkillsUSA dress. **For women:** Official SkillsUSA white polo shirt with black dress slacks or skirt, black leather shoes and black socks or black or clear seamless hose or official SkillsUSA dress. To purchase official work clothes, contact Midwest Trophy Manufacturing Co Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in a career and technical education (CTE) program with video production as the occupational objective.

Equipment and Materials

Supplied by the national technical committee:
Facilities and power

Supplied by the contestant:

1. A camera system capable of recording video and outputting video, S-video, or Firewire IEEE-1394
2. One Non-Linear editing system
3. Microphone (wired and wireless)
4. Two or more batteries and power supply/charger for camera
5. Two new blank videotapes (for your camera)
6. 20' AC extension cord
7. Outlet power strip
8. Tripod

*Safety Requirements: Both the instructor and the contestant certify by agreeing to enter this contest that the contestant has received instructions and has satisfactorily passed an examination on the safe use of portable lights and tripods (if utilized). They also certify that the equipment has been thoroughly inspected and is in safe working condition. Further, they agree that SkillsUSA Inc., the SkillsUSA Championships technical committees, and judges are released from all responsibility relating to personal injuries resulting from its use. Contestants will be

removed from competition if proper training has not been provided and/or they are using the equipment in an unsafe manner.

Scope of the Contest

1. Each team shall be comprised of two student members from the same school and same division.
2. The assignment will consist of the following:
 - a. Video to be shot on location as needed to convey the assigned theme or objective.
 - b. Contestants are to edit a 60-second video production (penalties will be assessed for video projects under/over 60 seconds).
 - c. The completed video production must convey an adequate representation of the subject or theme.
 - d. Designated time periods will be provided for videotaping and editing.
3. Emphasis will be placed on:
 - a. Professional production of the video by industry standards.
 - b. Quality of audio and video
 - c. Conveyance of the theme to the viewer.
4. All teams will submit projects on Mini-DVD tape format.
5. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee:
 - a. Demonstrate knowledge of television production technology, safety procedures, and terminology.
 - b. Prove production planning through a completed storyboard.
 - c. Appropriate use of lighting
 - d. Perform videotape recording and editing.
 - e. Perform digital audio mixing.
6. Each student will be required to individually take a written 50-question test covering basic video knowledge. Both teammate scores will be averaged together on the score sheet.

Written Test Study Guide

Due to a variety of textbook/instructional materials that may be used at different programs/schools, we want to ensure that all student teams have an equal base of knowledge. To that end, we are pulling questions from a resource that every student team has access to: Questions from the specific units listed below. There is online text available for each unit as well as practice quizzes. You are welcome to use this resource as a means of preparation for the written test.

Module 8 – How the TV Process Works

Fields & Frames, NTSC Standard, Aspect Ratios

Module 17 – Cameras: The Basics 1-2

Camera Imaging Device, Minimum Light Levels,
Basic Camera Moves

Module 37 – Television Sound

The Basic Loudness and Frequency

Module 38 – Microphones: Part 1

Major Microphone Designs, Directional Characteristics

Module 49 – Video Recorder Operation

Video Recorder Operations, Care and Handling
of Videotape, Time Base Correctors

Module 52 – Solving Continuity Problems

Solving Continuity Problems, Bridging Interview
Edits, Crossing the Line

Module 53 – Technical Continuity

Audio Continuity Problems, Video Continuity
Problems

Module 67 – Legal & Ethical Issues

Copyright Materials, Fair Use

Our thanks to Dr. Ron Whitaker for extending permission to use this resource for the SkillsUSA national TV/Video Production contest.

Note: Video tapes become the property of SkillsUSA.

Additional resources are available online. “Contest Singles” include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
TELEVISION (VIDEO) PRODUCTION RATING SHEET**

ITEMS EVALUATED	POSSIBLE POINTS	CONTESTANT NUMBER							
Storyboard: Is the theme understandable on the storyboard sheets?	10								
Communication Effectiveness: How well does the production convey theme?	10								
Is content organized, easy to understand and informative?	10								
Does message create viewer interest?	10								
Production Elements: Videography skills; steady camera, using three types of shots and good timing	10								
Audio quality: distortion-free, appropriate levels and balance	10								
Use of lighting: lighting contributions to overall production	10								
Use of creative shots and/or audio elements	10								
Editing skills: good editing techniques and effectiveness	10								
Proper use of color bars, countdown, and 60-second segment length (+/-5 frames)	10								
SUBTOTAL									
Written test	15								
CLOTHING PENALTY (minus 0 to 5 percent of total points)									
TOTAL									

Note: Items evaluated may be expanded and will be assigned points by the technical committee dependent on the complexity of the problem and availability of equipment. Details will be explained at the contestants' meeting prior to the contest.

WELDING



Purpose

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of welding.

First, refer to General Regulations, Page 9.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase official work clothes, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

Eligibility

Open to active SkillsUSA members enrolled in programs with welding as the occupational objective.

Equipment and Materials:

1. Supplied by the technical committee:
 - a. All necessary welding equipment and materials
 - b. All instructions and procedure sheets with drawings
 - c. All necessary information and furnishings for judges and the technical committee
2. Supplied by the contestant:
 - a. Hearing and/or ear protection
 - b. Welding helmet with appropriate filter plate/lens and protective cover plate/lens in a flip or slide front. Auto darkening shields are permissible
 - c. Welding helmet with appropriate filter plate/lens and protective cover plate/lens in a flip or slide front for OFC, PAC. Auto darkening shields are permissible
 - d. Spare spatter and filter lenses/plates for arc welding helmet and oxyacetylene goggles
 - e. Pocket calculator
 - f. Lead pencil and/or ballpoint pen
 - g. Soap stone with holder
 - h. Scribe with magnet
 - i. Combination square set
 - j. 10-foot (3.1 meters) steel tape measure
 - k. Fillet weld gauge
 - l. 16-ounce (.45 kilogram) ball peen hammer
 - m. Center punch

- n. 10-inch (254 millimeters) vise grips
- o. 6-inch (152 millimeters) side cutting pliers or diagonal cutting pliers
- p. 6-inch (152 millimeters) needle nose pliers
- q. Chipping hammer with or without wire brush
- r. Stainless steel wire brush

Specific Rules for Contest Participants

1. Contestants must correctly use the welding equipment during the contest. The contest chairman and contest coordinator may stop a contestant at any section of the contest if they deem a contestant's manner to be hazardous to either themselves or others. Such stoppage shall disqualify the participant for that section of the contest. If the contestant is warned a second time, he or she will be disqualified as a contest participant.
2. Contestants will be assigned a contest number for use during the welding contest. The contestants will be known to the contest judges by their assigned number only.
3. While the contest is in progress, there shall be no communication between the contestants or between the contestants and anyone else, except as directed by a judge, contest coordinator or contest chair.
4. The welding contest will be of a performance nature.
5. All terms and definitions and welding symbols will be in accordance with the current editions of ANSI/AWS A3.0 (Terms & Definitions) and ANSI/AWS A2.4 (Symbols).
6. Time limits will be established on the contest procedure sheets for all segments of the test.
7. Evaluation of the completed project will be judged visually. Nondestructive and/or destructive tests may be used to complete the project evaluation.
8. Welding and cutting operation instructions will be specified in drawings and procedure sheets provided to the contestants.

Scope of the Contest

1. Contestants will demonstrate their ability to perform jobs and skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee. Committee membership includes Alabama Power Co., American Welding Society, Arcet Equipment Co., Emmert Welding & Mfg. Co. Inc., Hobart Institute of Welding Technology, Honeywell Engines & Systems, ITW Hobart Brothers Co., Lincoln Electric Co., Linweld Inc., Miller Electric Mfg. Co. Inc., Salt River Project, Smith Equipment Co., The Ohio State University, Welding Education & Consulting and Welding Engineering Supply Co.

Note: The following items marked * should be considered essential.

a. Safety

- *1. Demonstrate personal safety.
- *2. Demonstrate general shop safety.
- *3. Demonstrate gas, electrical and chemical safety.
- *4. Demonstrate knowledge of proper actions to be taken in an emergency.

b. Measurements

- 1. Identify basic metal-working tools used in measuring.
- *2. Use visual measuring tools to accuracy of $\frac{1}{32}$ of an inch.
- 3. Employ the components of a combination square set.
- *4. Use layout and marking tools as required.
- *5. Determine wire feed speed as indicated on drawing.

c. Blueprint Reading

- *1. Use information found in the information block of the drawing.
- *2. Read and understand three-dimensional drawings.
- 3. Identify the basic views used in blueprints including assembly, detail and fit-up drawings.
- *4. Identify common types of lines, abbreviations and symbols in accordance with national drawing standards—ANSI.
- *5. Identify basic welding symbols and components of a symbol (such as arrow, reference line, tail, size or length) in accordance with the national welding symbols standards—AWS.

d. Shielded Metal Arc Welding (SMAW)

- *1. Demonstrate safety procedures for SMAW.
- *2. Demonstrate ability to correctly set up SMAW power sources, related welding equipment and do basic process and equipment troubleshooting.
- 3. Correctly identify base metal prior to welding.
- *4. Set up and shut down equipment for welding of carbon steel and/or stainless steel.
- 5. Select correct type of filler metal size of electrode based on carbon steel and/or stainless steel plate ($\frac{1}{4}$ -inch to $\frac{1}{2}$ -inch thickness).
- *6. Prepare carbon steel and/or stainless steel for welding.
- *7. Start, stop and restart stringer beads on carbon steel and/or stainless steel in the flat, horizontal, vertical up and down and overhead positions.
- *8. Weld a pad with a multiple pass weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and down and overhead positions.

- *9. Weld a lap joint with a single pass, fillet weld on carbon steel and stainless steel sheet/plate in flat, horizontal, vertical up and down and overhead positions.

- 10. Weld a lap joint with a multiple pass, fillet weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and down and overhead positions.

- *11. Weld a T-joint with a single-pass, fillet weld on carbon steel and stainless steel sheet/plate in the flat, horizontal, vertical up and down and overhead positions.

- 12. Weld a T-joint with a multiple-pass, fillet weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and down and overhead positions.

- *13. Weld a butt joint with a single-pass, square groove weld on carbon steel and stainless steel sheet/plate in the flat, horizontal, vertical up and down and overhead positions.

- *14. Weld a butt joint with a partial joint penetration, single pass, double V-groove weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and down and overhead positions.

- *15. Weld a butt joint with a multiple pass, V-groove weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and down and overhead positions.

- 16. Weld a butt joint with complete joint penetration, multiple pass, double groove weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and down and overhead positions.

- 17. Weld 2 to 8 inch diameter, schedules 40 to 80 carbon steel and stainless steel pipe, single/multiple pass V-groove weld in the 2G, 5G and 6G positions.

- *18. Lay out, weld, cut and prepare coupons for evaluation.

- 19. Test prepared coupon.

e. Gas Metal Arc Welding (GMAW)

- *1. Demonstrate correct safety procedures for GMAW.

- *2. Demonstrate ability to correctly set up GMAW power sources, related welding equipment and do basic process and equipment troubleshooting.

- 3. Correctly identify base metal prior to welding.

- *4. Set up and shut down equipment for short circuiting, globular, spray and pulsed transfer welding of carbon steel, stainless steel and/or aluminum.

- 5. Select correct type of filler metal size of electrode, type of shielding gas, wire feed speed and voltage based on carbon steel, stainless steel and/or aluminum sheet and/or plate (1/16-inch to 3/8-inch thickness).

- *6. Prepare the carbon steel, stainless steel and/or aluminum for welding.
 - *7. Start, stop and restart stringer beads on carbon steel, stainless steel and aluminum sheet/plate in the flat, horizontal, vertical up and down, and overhead positions.
 - 8. Weld a pad with a multiple-pass weld on carbon steel, stainless steel and aluminum sheet/plate in the flat, horizontal, vertical up and down and overhead positions.
 - *9. Weld a lap joint with a single-pass, fillet weld on carbon steel, stainless steel and aluminum sheet/plate in flat, horizontal, vertical up and down and overhead positions.
 - 10. Weld a lap joint with a multiple-pass, fillet weld on carbon steel, stainless steel and aluminum plate in the flat, horizontal, vertical up and down and overhead positions. Interrupt root pass at mid point and restart arc.
 - *11. Weld a T-joint with a single-pass, fillet weld on carbon steel, stainless steel and aluminum sheet/plate in the flat, horizontal, vertical up and down and overhead positions.
 - 12. Weld a T-joint with a multiple-pass, fillet weld on carbon steel, stainless steel and aluminum plate in the flat, horizontal, vertical up and down and overhead positions.
 - *13. Weld a butt joint with a single-pass, square groove weld on carbon steel, stainless steel and aluminum sheet/plate in the flat, horizontal, vertical up and down and overhead positions.
 - *14. Weld a butt joint with a partial joint penetration, single-pass, double V-groove weld on carbon steel, stainless steel and aluminum plate in the flat, horizontal, vertical up and down and overhead positions.
 - *15. Weld a butt joint with a multiple-pass, V-groove weld on carbon steel, stainless steel and aluminum plate in the flat, horizontal, vertical up and down and overhead positions.
 - 16. Weld a butt joint with complete joint penetration, multiple-pass, double V-groove weld on carbon steel, stainless steel and aluminum plate in the flat, horizontal, vertical up and down and overhead positions.
 - 17. Weld 2 to 8 inch diameter, schedule 40 to 80 carbon steel, stainless steel and aluminum pipe, single/multiple pass V-groove weld in the 2G, 5G and 6G positions.
 - *18. Lay out, weld, cut and prepare coupons for evaluation.
 - 19. Test prepared coupons.
- f. Fluxed Cored Arc Welding (FCAW)**
- *1. Demonstrate correct safety procedures for FCAW.
 - *2. Demonstrate ability to correctly set up FCAW power sources, related welding equipment and do basic process and equipment troubleshooting.
 - 3. Correctly identify base metal prior to welding.
 - *4. Set up and shut down equipment for welding of carbon steel and/or stainless steel.
 - 5. Select correct type of filler metal, size of electrode, type of shielding gas (if needed), wire feed speed and voltage based upon carbon steel and/or stainless steel sheet and/or plate (1/16-inch to 3/8-inch thickness).
 - *6. Prepare carbon steel and/or stainless steel for welding.
 - *7. Start and stop and restart stringer beads on carbon steel and stainless steel sheet/plate in the flat, horizontal, vertical up and overhead positions.
 - 8. Weld a pad with a multiple-pass weld on carbon steel and stainless steel sheet/plate in the flat, horizontal, vertical up and overhead positions.
 - *9. Weld a lap joint with a single-pass, fillet weld on carbon steel and stainless steel sheet/plate in flat, horizontal, vertical up and overhead positions.
 - 10. Weld a lap joint with a multiple-pass, fillet weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and overhead positions. Stop and restart in middle of joint.
 - *11. Weld a T-joint with a single-pass, fillet weld on carbon steel and stainless steel sheet/plate in the flat, horizontal, vertical up and overhead positions.
 - 12. Weld a T-joint with a multiple-pass, fillet weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and overhead positions.
 - *13. Weld a butt joint with a single-pass, square groove weld on carbon steel and stainless steel sheet/plate in the flat, horizontal, vertical up and overhead positions.
 - *14. Weld a butt joint with a partial joint penetration, single pass, double V-groove weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and overhead positions.

- *15. Weld a butt joint with a multiple-pass, V-groove weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and overhead positions.
- 16. Weld a butt joint with complete joint penetration, multiple-pass, double V-groove weld on carbon steel and stainless steel plate in the flat, horizontal, vertical up and overhead positions.
- 17. Weld 2 to 8 inch diameter, schedules 40 to 80 carbon steel and stainless steel pipe, single/multiple pass V-groove weld in the 2G, 5G and 6G positions.
- *18. Lay out, cut and prepare coupons for evaluation.
- 19. Test prepared coupons.

g. Gas Tungsten Arc Welding (GTAW)

- *1. Demonstrate safety procedures for GTAW.
- *2. Demonstrate ability to correctly set up GTAW power sources, related welding equipment and do basic process and equipment troubleshooting.
- 3. Correctly identify base metal prior to welding.
- *4. Set up and shut down equipment for regular and pulsed welding of aluminum, stainless steel and/or carbon steel.
- *5. Select the correct size and type of tungsten and/or filler metal based on aluminum, stainless steel or carbon steel sheet and/or plate (1/16-inch to 1/4-inch thickness).
- *6. Prepare aluminum, stainless steel and/or carbon steel for welding.
- *7. Start, stop and restart stringer beads on aluminum, stainless steel and carbon steel sheet/plate in the flat, horizontal, vertical up and down and overhead positions.
- 8. Weld a pad with multiple-pass weld on aluminum, stainless steel and carbon steel sheet/plate in the flat, horizontal, vertical up and down and overhead positions.
- *9. Weld a lap joint with a single-pass, fillet weld on aluminum, steel, stainless steel and carbon steel sheet/plate in flat, horizontal, vertical up and down and overhead positions.
- 10. Weld a lap joint with a multiple-pass, fillet weld on aluminum, stainless steel and carbon steel plate in the flat, horizontal vertical up and down and overhead positions.
- *11. Weld a T-joint with a single-pass fillet weld on aluminum, stainless steel and carbon steel sheet/ plate in the flat, horizontal, vertical up and down and overhead positions.

- 12. Weld a T-joint with a multiple-pass, fillet weld on aluminum, stainless steel and carbon steel plate in the flat, horizontal, vertical up and down and overhead positions.

- *13. Weld a butt joint with a single-pass, square groove weld on aluminum, stainless steel and carbon steel sheet/plate in the flat, horizontal, vertical up and down and overhead positions.

- *14. Weld a butt joint with a partial joint penetration, single-pass, double V-groove weld on aluminum, stainless steel and carbon steel plate in the flat, horizontal vertical up and down and overhead positions.

- *15. Weld a butt joint with a multiple-pass, V-groove weld on aluminum, stainless steel and carbon steel plate in the flat, horizontal, vertical up and down and overhead positions.

- 16. Weld a butt joint with complete joint penetration, multiple-pass, double V-groove weld on aluminum, stainless steel and carbon steel plate in the flat, horizontal, vertical up and down and overhead positions.

- 17. Weld 2 to 8 inches diameter, schedules 40 to 80 aluminum, stainless steel, carbon steel pipe, single/multiple pass V-groove weld in the 2G, 5G and 6G positions.

- *18. Lay out, weld, cut and prepare coupons for evaluation.

- 19. Test prepared coupons.

h. Oxygen Fuel Cutting (OFC)

- *1. Demonstrate safety procedures for OFC.
- *2. Demonstrate ability to correctly set up the OAC equipment for cutting and do basic process troubleshooting.
- 3. Correctly identify base metal prior to cutting.
- *4. Set up and shut down equipment for cutting carbon steel plate.
- *5. Select correct tip size and gas pressure for serving carbon steel plate (1/4-inch to 1/2-inch thickness).
- 6. Prepare carbon steel for cutting.
- *7. Cutting operations will be specified in drawings and procedure sheets provided to the contestants.
- *8. Properly light, adjust the flame, and shut down the oxygen fuel equipment.
- *9. Use a straight edge and soap stone laying out the prescribed pattern.
- *10. Make a square cut on carbon steel in flat, horizontal, vertical and overhead positions.

11. Make a bevel cut (45-degree angle) on carbon steel plate in the flat, horizontal, vertical and overhead positions.
 - *12. Pierce a hole on carbon steel in the flat, horizontal, vertical and overhead position.
 - *13. Make a pipe and tubing cut on carbon steel pipe in flat, horizontal, vertical and overhead positions.
 14. Make a gouge and groove cut on carbon steel in flat, horizontal, vertical, overhead positions.
 - *15. Lay out, weld, cut and prepare coupons for evaluation.
 16. Test prepared coupon.
- i. Plasma Arc Cutting (PAC)**
- *1. Demonstrate safety procedures for PAC.
 - *2. Demonstrate ability to correctly set up the PAC power sources, related cutting equipment and do basic process and equipment troubleshooting.
 3. Correctly identify base metal prior to cutting.
 - *4. Set up and shut down equipment for cutting carbon steel, stainless steel and/or aluminum.
 - *5. Select correct cutting head and gas pressure for severing carbon steel, stainless steel or aluminum plate and/or sheet (1/16-inch to 1/4-inch thickness).
 6. Prepare carbon steel, stainless steel and/or aluminum for cutting.
 - *7. Cutting operations will be specified in drawings and procedure sheets provided to the contestants.
 - *8. Properly adjust and use the plasma arc equipment.
 - *9. Use a straight edge and soap stone laying out the prescribed pattern.
 - *10. Make a square cut on carbon steel, stainless steel and aluminum sheet/plate in flat, horizontal, vertical and overhead positions.
 11. Make a bevel cut (45-degree angle) on carbon steel, stainless steel and aluminum sheet/plate in the flat, horizontal, vertical and overhead positions.
 - *12. Pierce a hole on carbon steel, stainless steel and aluminum sheet/plate in the flat, horizontal, vertical and overhead position.
 - *13. Make a pipe and tubing cut on carbon steel, stainless steel and aluminum pipe in the horizontal position.
 - *14. Make a gouge and groove cut on carbon steel, stainless steel and aluminum sheet/plate in the flat position.
 - *15. Lay out, cut and prepare coupons for evaluation.
 16. Test prepared coupon.
2. Judging Criteria — The contest will be evaluated on the competencies based on the following rating system. Point values for each item will be established by the technical committee according to the difficulty of the assigned task. Final judging of the welded projects will be evaluated using the following Visual Inspection Criteria:
 - a. Dimensional accuracy, including distortion
 - b. Conformity to drawing requirements, including determination of whether all welds have been completed and whether the finished welds conform to the required size and contour
 - c. Visual examination of the welds for:
 1. Cracks
 2. Undercut
 3. Overlap
 4. Craterfill
 5. Spatter
 6. Arc strikes
 7. Porosity
 8. Convexity and reinforcement
 3. Welding equipment may be obtained from a variety of manufacturers and may include transformers, rectifiers and/or inverters.
 4. Filler metals will be compatible with the metals being welded and will be detailed on the contest procedure sheet. Instructions to the contestants will define more specifically the filler metals that may be used.

Additional resources are available online. "Contest Singles" include prior year's contests, official contest guidelines, the general section of the SkillsUSA Championships Technical Standards and any preparation tips offered by the national technical committee and education team. For more information, visit www.skillsusa.org/singles.html.

**SKILLSUSA CHAMPIONSHIPS
WELDING RATING SHEET**

ITEMS EVALUATED <small>(Points should be assigned by technical committee members based on the difficulty of the task)</small>	POSSIBLE POINTS	CONTESTANT NUMBER						
BURNING								
Layout								
Use of Torch								
Cut Edge Appearance								
GMAW								
Layout and Assembly								
Equipment Setup and Adjustment								
Bead Appearance								
GTAW								
Project Assembly								
Equipment Setup and Adjustment								
SMAW								
Equipment Setup and Adjustment								
Bead Appearance								
OTHER WELDING PROCESSES								
OVERALL DIMENSIONS								
WELD TEST								
OVERALL APPEARANCE								
SAFETY								
WRITTEN TEST								
ORAL PROFESSIONAL ASSESSMENT								
SUBTOTAL								
CLOTHING PENALTY <small>(minus 0 to 5 percent of total points)</small>								
TOTAL								

Technical Standards (2005–2007)

HELP SECTION

Below, you'll find answers to the more common questions that users of this CD may ask. If you can't find an answer below to your question, please send an email detailing your problem as specifically as possible to tkercheval@skillsusa.org.

I've never used "Adobe Acrobat Reader" before. How do I use it to navigate through a document, and what types of features does it have?

Acrobat Reader is a free program provided by Adobe, and is used for the viewing of "PDF" documents. PDF documents are widely used to provide users with an easy, interactive way of viewing large documents or publications online or on a CD-ROM. With "Acrobat Reader," you have multiple options in how you view a document. You can use links as you would on a web page. You can use "Bookmarks" to immediately jump to a desired section. You can zoom in or zoom out. View the "Help" section of Acrobat Reader to learn more about all the features Acrobat Reader provides, or just experiment on your own to see what each control does (don't worry, you can't change the document in any way, so there's no risk involved in experimenting). For a more concise tutorial on using Acrobat Reader to navigate through a document, [go to this web page](#).

I can't get the movie to play on my computer, or I get an error message when attempting to open it. What's wrong?

In order to play the movie, you need a program called "RealPlayer" installed on your computer. This is a fairly common program, and you may have it on your system already. If not, go to www.real.com and look for the "Free RealPlayer" link (They also offer higher-end versions of the software for sale.) Click on the link and follow the instructions to install RealPlayer. You should now be able to play the movie.

The movie doesn't play very well on my computer. It's choppy and the picture often freezes and then starts again.

This is probably the result of your computer not having an adequate amount of memory or a fast enough CD drive. For better results, try copying the video file to your hard drive and playing it from there. Open the contents of the CD and look for the file called "champions.rm". Drag the file to your hard drive to copy it then double-click on the icon to play it.

The "Print This Section" buttons don't seem to work for me. How can I print only the contest(s) I'm interested in?

The "Print This Section" buttons throughout this document use JavaScript to perform their print function. If JavaScript is not enabled on your computer, the buttons won't work. If this is the case, and you don't want to enable JavaScript, simply choose "Print" from the menu bar as you normally would for any other document. Select the pages you want to print in the print dialogue box.

I get a Postscript error when using the “Print This Section” buttons. What’s wrong?

This seems to be a problem that occurs with the MAC. In order for the “Print This Section” buttons to work properly, you must be viewing the PDF file in at least Acrobat 5.0 or Adobe Reader 5.0, which is included on the Mac version of the CD. Adobe Reader 5.0 normally opens automatically when the CD is placed in the drive. However, if you already have an older version of Acrobat or Adobe Reader on your hard drive, the older version may automatically launch when you insert the CD-ROM instead of the newer version. This will cause the postscript errors when trying to print using the “Print This Section” buttons. To correct the problem, double-click on the Technical Standards CD icon on your desktop. Look for the “Adobe Reader 5.0” folder and open it. From there, double-click on the “Acrobat Reader 5.0” icon to launch the program. Once Acrobat 5.0 is open, choose “Open” from the file menu and select the file called “tech.pdf” from the CD. The “Print This Section” buttons should now work properly.

What do I do if the CD will not automatically launch when I use it on my or another computer?

Most Windows-based PCs use a preset function called “Autorun” that will cause most CDs to automatically launch once they’re placed in the CD-ROM drive. If the CD does not launch automatically, it’s probably because the “Autorun” feature has been disabled. Consult your computer’s help section to re-enable the “Autorun” feature. Or, go to "My Computer" and right-click on the icon for your CD drive. Select "Explore" from the menu that appears and then double-click the file "tech.pdf". The file should now open.

Where can I find other, up-to-date sources of information on my specific contest area, the SkillsUSA Championships, World Skills Competition, or other topics related to SkillsUSA competitive events?

Go to the [“Links”](#) section in this document. There you’ll find all the links you’ll need to keep you up-to-date on all SkillsUSA contest information, including detailed information on the SkillsUSA Championships, our annual national conference, individual medal winners in past conferences, and much, much more. If you still can’t find the information you’re looking for, e-mail your question to anyinfo@skillsusa.org.



www.skillsusa.org